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Effectiveness of Culturally Grounded Adaptations of an Evidence-based Substance Abuse Prevention Program with Alternative School Students

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Effectiveness of Culturally Grounded Adaptations of an Evidence-based Substance Abuse Prevention Program with Alternative School Students

by

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Dedication

This is dedicated to my husband, Holland Hopson, who has been a constant source of strength and encouragement.

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Effectiveness of Culturally Grounded Adaptations of an Evidence-based Substance Abuse Prevention Program with Alternative School Students

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Preventing substance use among alternative school students presents many challenges for researchers and practitioners. Because evidence-based programs are sometimes viewed as inadequate for addressing the needs of culturally diverse youth or irrelevant for youth in a particular school setting, there is a need for culturally grounded prevention programs. Prevention programs need to reflect the culture and life experiences of the participants in order to be effective. Creating adaptations of evidence-based programs for particular school settings can resolve this need if they are able to maintain evidence-based program components while incorporating the culture and life experiences of local students.

The present study evaluated adapted versions of an evidence-based prevention program, Keepin' it REAL. Four schools participated in an earlier phase of the study in which they created their own videos and materials to supplement the core curriculum. In the phase of the study presented here, the adapted versions of the curriculum are

evaluated using mixed methods that include a quasi-experimental pretest posttest follow-up design and qualitative methods informed by grounded theory. Students were selected for participation using purposive sampling, and Participatory Action Research methods guided a collaborative approach to defining data collection procedures. Participating students attended six sessions of the curriculum, completed a questionnaire at pretest, posttest, and six-week follow-up, and participated in a focus group following completion of the curriculum.

Repeated measures Multivariate Analyses of Variance (MANOVAs) were conducted to assess the effect of participation in the adapted versions of the curriculum on alcohol and marijuana use and intentions to accept alcohol and marijuana. Focus groups were analyzed using a grounded theory approach to coding and defining themes. Findings indicate that participation in the curriculum was associated with reduced alcohol use and intentions to accept alcohol among younger students. The focus group data reveals shortcomings of the curriculum for this population.

Adaptation of evidence-based curricula presents a promising approach for increasing the use of evidence-based practices and ensuring that programs reflect the culture and life experiences of participants. This study explores this line of inquiry by evaluating adapted versions of Keepin' it REAL.

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CHAPTER I

Statement of the Problem

Preventing substance abuse among adolescents presents many challenges for researchers and practitioners. Evidence-based prevention programs are critical for schools, especially alternative schools that serve youth who are at greater risk for drug abuse (Grunbaum, Lowry, & Kann, 2001; Kubik, Lytle, & Fulkerson, 2004). More research is focusing on the successful implementation of these programs into school settings, but school staff and students report that evidence-based curricula are rarely used in schools (Grunbaum et al., 2000). Alternative schools offer excellent opportunities for substance abuse prevention because they provide access to students who need these services.

Preventing early onset of substance use is an important step toward reducing dependence and abuse. Those who use alcohol for the first time before age 15 are five times more likely to report alcohol dependence or abuse than those who begin using alcohol after age 20. In fact, 95 percent of those reporting alcohol dependence or abuse began drinking before age 21 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2003).

Of the 2.6 million Americans who tried marijuana for the first time in 2002, two thirds were under age 18. Most new users of inhalants (78 percent) were also under 18. Among new users of alcohol, most were under the legal drinking age of 21, and 73 percent were under age 18. Over 75 percent of new cigarette users in 2001 were under the age of 18 (Johnston, O'Malley, Bachman, & Schulenberg, 2005).

Reported use of some illicit substances has decreased among eighth graders from 9.7 percent in 2003 to 8.4 percent in 2004. Use of marijuana decreased in this age group, as did use of methamphetamines and steroids. Tenth graders reported decreases in the use of ecstacy, GHB and Ketamine, and cigarette smoking. Although the last few years have seen decreases in the use of some substances, adolescents continue to use many others. Eighth graders reported significant increases in inhalant use and tenth graders reported increases in the use of cocaine. The use of many other substances, such as alcohol, heroin, crack, cocaine, hallucinogens, amphetamines, and sedatives remained unchanged for students in eighth through twelfth grades. Although students report disapproval of the use of marijuana, cigarettes, and other substances, students reported decreases in perceived risk of using heroin, LSD, and inhalants, as well as increased availability of cocaine. Significant reductions in reported substance use occurred most often among eighth graders. Few significant changes were noted among tenth and twelfth graders, indicating that older students may benefit from improved prevention and harm reduction efforts (National Institute on Drug Abuse [NIDA], 2004).

The lack of change in the use of many substances is discouraging considering the number of evidence-based programs designed to prevent and reduce substance use. School-based prevention programs are especially important because they have the opportunity to reach large numbers of children and adolescents at the time when they are beginning to experiment with substances (Grunbaum et al., 2000). In addition, schools are constantly challenged to prevent and reduce substance use that occurs on school grounds (Grunbaum et al., 2000).

Alternative Schools

Alternative schools have particular needs because they often serve students that are at greater risk for substance abuse (Grunbaum, Lowry, & Kann, 2001; Kubik, Lytle, & Fulkerson, 2004). Alternative schools vary widely in the characteristics of the students they serve, the culture of the school, resources, class size, and many other factors that determine school success. It is therefore difficult to make generalizations about students in alternative schools. Alternative schools serve a range of different purposes from providing students with the option of attending a non-traditional school setting to providing a disciplinary setting for students who break school rules (Raywid, 1994). Despite their differences, however, most alternative schools serve students at higher risk of substance abuse who have not succeeded in a traditional school (Grunbaum et al., 2000). Substance use is one of the primary reasons for attending alternative schools along with poor academic achievement and disciplinary problems. It is therefore likely that many students in alternative schools could benefit from programs that aim to reduce or prevent substance use (Connor, Poyrazli, Ferrer-Wreder, & Grahame, 2004; Weller et al., 1999).

Challenges in School Based Prevention

The US Department of Education now requires that schools receiving funding through the Safe and Drug Free Schools Act implement programs that are consistent with research on effective practices (Ringwalt, Ennett, Vincus, Thorne, & Rohrback, 2002). Implementing an evidence-based curriculum in a school setting presents many challenges. In fact, few schools implement evidence-based curricula despite the

availability of many programs that have demonstrated success in reducing risk for substance use.

Most students participating in the 2003 National Survey on Drug Use and Health (NSDUH) indicated that they had seen or heard substance use prevention messages in school. Indeed, youth participation in programs addressing substance use increased in 2003. When students were asked about the format of prevention programs in their schools, they reported that most school-based prevention messages were delivered as lectures or films in a class setting. Although students receiving these prevention messages reported lower substance use than those who received no messages, this type of prevention is not consistent with research on effective approaches for substance abuse prevention (SAMHSA, 2004).

There are many possible reasons for the lack of evidence-based programs implemented in school settings. Programs may be expensive, complex, and difficult to implement. Teachers and administrators may lack enthusiasm about the curriculum (Ennett et al., 2003). Practitioners may not have the required training for implementation (Corrigan, McCracken, & Blaser, 2003; Ennett et al., 2003) and may have difficulty finding time for training and implementing the curriculum (Ennett et al., 2003). Program implementation is unlikely if the assumptions of evidence-based programs conflict with the philosophy of school settings, (Corrigan et al., 2001; 2003; Glisson, 2002; Klein & Sorra, 1996). Instead of focusing on abstinence, for example, some programs may use non-abstinence-based models, encouraging students who are already experimenting with drugs and alcohol to reduce their use (MacMaster, Holleran, & Chaffin, 2005). School

adminsitrators may feel that these programs are too controversial for their district and community.

Successful implementation of an evidence-based program requires that the school environment and staff support the use of new, innovative practices and see the need for substance abuse prevention. School staff are more likely to implement a new program if they view the program content favorably, are comfortable with the delivery approach, have been trained to implement the curriculum, and feel that they are capable of implementation (Ennett et al., 2003). Often staff and students at one school may feel that a curriculum developed outside of their community may not address their students' particular needs. Schools vary widely in students' academic performance, socio-economic status, ethnicity, and culture. The prevalence of substance use and substances of choice also may vary greatly from one school to another (Ennett et al., 2003).

Given the many potential challenges for implementation, some evidence-based curricula are better suited for school settings than others. Promoting the increased use of evidence-based substance abuse prevention in school settings will require changes in intervention characteristics, research designs, and staff training (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald., 2001; Hoagwood & Johnson, 2003). Characteristics of programs that have a better chance for success are flexibility in implementation requirements, well-manualized instructions that do not require extensive training, compatibility with the school's philosophy and district requirements, and limited number of sessions (Dusenbury, Brannigan, Falco, & Hansen, 2003). Researchers may need to be more flexible in their research designs to accommodate settings that are unable to provide random assignment of students into groups (Hoagwood & Johnson, 2003). It is also

necessary to increase efforts to collaborate with administrators, staff, and other key stakeholders in school settings to formulate research questions and designs. Researchers may also need to consider allowable adaptations to a curriculum that will make it more culturally appropriate for school settings (Castro, Barrera, & Martinez, 2004).

Research indicates that culturally grounded prevention programs,are more effective with minority youth (Castro, Barrera, & Martinez, 2004). Yet, the diversity of youth in school settings makes it difficult to find an approach that is culturally relevant for all students. In addition, the variety of approaches to alternative education calls for programs that can fit well within these settings. Guiding schools through a process of adapting evidence-based programs to meet their unique needs is one promising approach to improving the fit between prevention programs and alternative schools, but little research exists to inform this process. Without research examining effective approaches to adaptation, it is likely that evidence-based programs will remain unused by school and community settings (Castro, Barrera, & Martinez, 2004).

Making the Case for Adaptation

Many researchers assume that the effectiveness of an evidence-based practice will be greatly compromised unless it is implemented with fidelity. Yet, few community settings such as schools have successfully implemented curricula with strict adherence to established protocols. Reasons for lack of program fidelity in the community include inadequate training and support, staff turnover, large classroom sizes, and insufficient resources. Evidence-based curricula are also likely to have been developed and tested with White, middle class youth, whereas school settings typically serve students from many different ethnic and cultural backgrounds (Botvin, 2004).

Because interventions are seldom implemented with great fidelity in the community, researchers have begun to examine the benefits and consequences of adapting evidence-based curricula. Although adaptation may compromise a program's effectiveness, it also allows community organizations to tailor an intervention to meet the needs of their particular population. Improving the fit between an intervention and a community organization can increase buy-in from staff and consumers and increase the likelihood that the organization will continue to use the intervention (Castro, Barrera, & Martinez, 2004). Research also indicates that culturally grounded adaptations of evidence-based programs improve recruitment and retention of participants (Kumpfer, Alvarado, Smith, & Bellamy, 2002).

A gap exists in the literature on substance abuse prevention regarding culturally grounded curricula. Evidence-based prevention programs are perceived in many communities as inappropriate for local youth because they were developed and tested in a different community with samples that are not representative of their youth (Botvin, 2004; Castro, Barrera, & Martinez, 2004) Facilitating an adaptation process to make evidence-based prevention more appropriate for a given school is one way to resolve this tension. Yet, there is little existing research to guide the process of adaptation or to indicate whether an adapted program can be effective (Kumpfer et al., 2002). Without this type of research, it is likely that well-researched prevention programs will remain unused by schools, and the programs will fail to reach the youth that need them most.

Culturally grounded adaptations of evidence-based prevention programs are particularly important for alternative schools. Alternative schools have a great need for substance abuse prevention and present unique challenges. They tend to have students

from a range of cultural, ethnic, and socio-economic backgrounds who have more risk factors than students from traditional schools (Grunbaum, Lowry, & Kann, 2001; Lehr et al., 2004; Vaughn, Slicker, & Hein, 2000) Alternative schools also vary widely in their culture and approach to working with students (Raywid, 1994). Some alternative schools only work with students for a few weeks, while others may have students enrolled for a year or more. Each school is likely to have unique needs.

Little research has examined the impact of program adaptation on effectiveness. Debate continues about whether adaptation should be encouraged and about the types of adaptations that would be helpful (Botvin, 2004; Kumpfer et al., 2002). Research needs to explore means of adaptation that allow community organizations to personalize the curriculum without compromising the core components that make the intervention effective.

The Importance of the Study

This study evaluates the effectiveness of adaptations to an evidence based substance abuse prevention program, Keepin' it REAL. Keepin' it REAL has many characteristics that allow for success in school settings. It includes well-manualized instructions that require little training and a limited number of sessions. It is also consistent with evidence based approaches to substance abuse prevention discussed in the following chapter, such as using social influence approaches to behavior change, and employing information, norms, and skill building to change attitudes and behaviors (Botvin, 2004; Hecht et al., 2003). The program takes its name from four strategies for resisting a drug offer: Refuse, Explain, Avoid, and Leave. Keepin' it REAL was developed and originally evaluated in Phoenix, Arizona with the involvement of local

youth (Hecht et al., 2003). Data from clinical trials indicate significant positive outcomes for youth in preventing and reducing use of drugs, alcohol, and tobacco. Keepin' it REAL has been named a model program by the Substance Abuse and Mental Health Services Association (Hecht, et al., 2003; Kulis, Nieri, Yabiku, & Stromwall, 2005).

Keepin' it REAL has demonstrated success among students from a range of ethnic and cultural backgrounds. However, pilot data indicates that many aspects of the curriculum may not address the needs of students in Texas as effectively as it has for students in Arizona (Holleran, Taylor-Seehafer, Pomeroy, & Neff, 2005). Additionally, the program has also not been well researched for higher risk youth, such as those attending alternative schools. This study is part of a larger study in which students at different school and community settings were asked to create adaptations of the Keepin' it REAL curriculum that reflected their real life experiences (Holleran & Hopson, 2006).

This research examines the effectiveness of the adapted versions of Keepin' it REAL. Alternative school staff and students engaged in a structured adaptation process to create an adapted Keepin' it REAL curriculum tailored specifically for their student population. The purpose of this study is to evaluate the effectiveness of site-specific adaptations of the Keepin' it REAL curriculum in different alternative school settings. The hypotheses examined in this study are

1. Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of alcohol.
2. Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of marijuana.

3. Participation in adapted versions of Keepin' it REAL will result in reduced alcohol use.
4. Participation in adapted versions of Keepin' it REAL will result in reduced marijuana use.

CHAPTER II: BACKGROUND

Introduction

The ongoing problem of substance use in schools calls for effective programs to reduce risk for abuse. Alternative schools present a unique opportunity for prevention because they provide access to large groups of students who are often at greater risk than students from traditional school settings (Grunbaum et al., 2000). Although a number of evidence-based programs exist, few schools are using these programs or strategies that are consistent with research on prevention. The following review discusses characteristics of alternative schools and their particular needs regarding prevention as well as current research on substance abuse prevention. Because school personnel rarely implement effective prevention programs and argue that programs do not meet the needs of a diverse student body (Botvin, 2004), the need for more culturally grounded approaches is emphasized. This illustrates the tension between implementing effective programs and allowing for adaptation of programs to improve their fit with particular school settings. For the purposes of this study, the term 'substance' refers to any illicit substance for youth under the age of 18, including tobacco, alcohol, marijuana, and other narcotics used without a prescription, although this particular study examines the use of alcohol and marijuana only.

The literature review is organized around the following questions:

1. Why conduct the study in alternative schools?
2. Why use an evidence-based substance abuse prevention program?
3. Why is it important for the curriculum to be culturally grounded for participants?
4. Why study the Keepin' it REAL curriculum in particular?

5. Why study the effectiveness of adapted versions of Keepin it REAL rather than the original version?

In addressing the first question, the review includes literature describing alternative schools, the students they serve, and substance use in these schools. In order to present the case for using an evidence-based practice, and Keepin' it REAL in particular, the review describes the characteristics of evidence-based substance abuse prevention in traditional and alternative schools and culturally grounded evidence-based programs, including Keepin' it REAL. The review goes on to describe Keepin' it REAL, along with its theoretical foundation and research support. In justifying the use of an adapted version of Keepin it REAL, the review summarizes literature on cultural adaptations of evidence-based programs, and the benefits of adapting evidence-based programs to improve the fit with particular settings, including alternative schools. Literature on the process of creating an adapted curriculum is also discussed.

Alternative Schools

The term 'alternative school' has been used to describe many different educational settings, including public schools, charter schools, magnet schools, and alternative programs operating within a traditional school. The alternative schools participating in this study are all public alternative high schools in or around Austin, Texas. Therefore, the following discussion of alternative schools focuses on public alternative schools.

There are approximately 11,000 public alternative schools and programs serving students at risk for school failure in the United States according to the National Center for Educational Statistics (NCES). This number has grown dramatically since 1998 when the

NCES reported that there were under 4,000 such programs (Kleiner, Porch, & Farris, 2002; Lehr, Moreau, Lange, & Lanners, 2004). The U.S. Department of Education defines alternative schools as public schools that:

1. Meet the needs of students whose needs are not addressed at a regular school,
2. Use nontraditional education practices,
3. Provide services in conjunction with a regular school, or
4. Do not fit within the categories of regular, special education, or vocational education (Kleiner et al., 2002).

When alternative schools were conceptualized in the 1960s, they were intended to provide innovative and non-traditional educational practices that better meet the needs of a diverse student population. These practices included a small student-teacher ratio, a student-centered curriculum, flexible structure, and a supportive learning environment. Increasingly, however, alternative schools are being constructed to serve students who are referred for disciplinary problems (Lehr, Moreau, Lange, & Lanners, 2004). Alternative schools often provide a range of services to students, including remedial education, counseling for emotional or behavioral needs, and vocational counseling (Kleiner et al., 2002).

Substance Use in Alternative Schools

Findings from a national survey conducted by the University of Minnesota Alternative Schools Research Project found that over one million students are currently attending alternative schools nationwide (Lehr et al., 2004). This number may be inflated because states may have different definitions of alternative schools. The National Center for Educational Statistics (NCES) found that approximately 613,000 students, or 1.3

percent of all public school students, are attending alternative schools (Kleiner et al., 2002). Respondents to a survey conducted by the Alternative Schools Research Project indicated that about twelve percent of alternative school students had a disability identified in an Individualized Education Plan, and disabilities consisted mainly of behavioral or emotional disorders, learning disabilities, or other health problems (Lehr et al., 2004).

Research indicates that youth in alternative high school settings tend to have higher rates of substance use than those attending traditional schools and are more likely to use alcohol and drugs as coping strategies (Lehr et al., 2004; Vaughn, Slicker, & Hein, 2000). Alternative school youth are also at risk of substance use later in life (Rohrbach, Sussman, Dent, & Sun, 2005). Students in alternative schools are more likely to report a number of risk behaviors, such as violence, substance use, and suicide attempts, than students in mainstream schools (Grunbaum, Lowry, & Kann, 2001; Kubik, Lytle, & Fulkerson, 2004). Although alternative schools report needing interventions for preventing health problems, especially depression and substance abuse, relatively little research has examined implementation and effectiveness of prevention interventions in alternative school settings (Kubik, Lytle, & Fulkerson, 2004).

According to the 1998 National Alternative High School Youth Risk Behavior Survey conducted by the Centers for Disease Control, over 92 percent of alternative school student respondents said they had consumed alcohol at least once, and two thirds had done so during the past month. More than 85 percent of students reported smoking marijuana and over a third had tried cocaine at least once. Over 90 percent of students said they had smoked cigarettes and 64 percent had smoked a cigarette during the past

month. Almost 40 percent of students said they had been offered or had sold an illegal substance on school property during the past year (Grunbaum et al., 2000). In another survey focusing on Texas students in alternative schools designated as dropout prevention/recovery programs, 62 percent of students reported current cigarette use. Over 70 percent of students said they had consumed alcohol in the last 30 days, and over half had engaged in heavy drinking, defined as five or more drinks within a few hours. Almost 50 percent reported current use of marijuana and over 26 percent reported current use of cocaine (Weller et al., 1999). Ethnic differences in substance use among alternative school students were also found. Black students were less likely to report cigarette use and heavy drinking than White or Hispanic youth (Weller et al., 1999). In another study of Texas alternative school students, Latino students were more likely to report cocaine use than other ethnic groups, and Blacks were more likely to report use of opiates or codeine (Peters et al., 2003).

Types of Alternative Schools

Alternative schools vary in their philosophy and techniques for addressing students' needs. Broadly defined, the purpose of alternative schools is to serve students whose needs are not met by traditional schools (Dupper, 2005). Many alternative schools have adopted the approach of providing a disciplinary setting for disruptive students to protect students in traditional schools. Other alternative schools view their purpose as creating an educational setting that meets the needs of high risk youth by providing smaller classes and more services to students (Dupper, 2005).

Alternative schools with a more disciplinary focus maintain structured schedules and demand strict compliance with school rules. Often, these settings may place greater

emphasis on changing student behavior than on promoting academic achievement (Dupper, 2005; Raywid, 1994). Students may only remain in a disciplinary alternative school for a few weeks before returning to their traditional school. In contrast, alternative schools that aim to implement appropriate and effective education practices for high risk youth provide more long-term services to students. They focus on promoting academic achievement and easing the transition between high school and employment or post secondary education (Dupper, 2005).

Raywid (1994) identifies three primary types of alternative schools. The first type, labeled Popular Innovations, aims to provide a positive educational experience for all students by employing techniques often identified as effective educational practices, such as small class size and flexible scheduling. Often this type of alternative school may employ programmatic themes or emphasize special content areas. Students may typically choose to enroll in Popular Innovations schools.

The second type of alternative school, described as Last Chance Programs, is used as a disciplinary program. Students are mandated to attend these programs and they may be used as an alternative to expulsion. These schools tend to focus more on behavior modification than employing alternative educational approaches. Typically, students are required to complete the same curriculum provided in their home school classroom (Raywid, 1994).

A third type of school identified by Raywid (1994) is labeled Remedial Focus and is defined as a remedial program which provides social, emotional, or educational rehabilitation with the intention of returning students to mainstream classrooms. These

schools often focus on creating a community atmosphere that promotes social and emotional growth (Raywid, 1994).

Although alternative schools may be labeled as characteristic of a particular type, many alternative schools combine components of each (Raywid, 1994). A school may be designated as a disciplinary setting for students mandated to attend because of behavior problems at their home schools, but the school may also aim to promote academic achievement using innovative teaching practices, for example.

Because alternative school settings differ in their culture and services to students, they may have widely different needs in the areas of substance abuse prevention. A school that enrolls students for only six weeks, for example, has different needs from one that maintains the same students for a year or more. Most alternative school settings, however, share the need for effective substance abuse prevention. Alternative school programs are able to access a large number of students who are at greater risk for substance use than students in many traditional school settings (Grunbaum et al., 2000). Yet, it is unlikely that one particular evidence-based program will adequately meet the needs of such different settings.

In addition to serving a student population that has a greater need for substance abuse prevention, alternative schools may also have organizational characteristics more conducive to successful prevention. Alternative schools often have smaller student-teacher ratios and smaller class sizes than traditional schools and provide a range of social services (Dupper, 2005; Raywid, 1994). It may be easier to implement a prevention program in small classrooms if the prevention program is intended to be implemented with small groups of participants. Teachers and counselors may feel that facilitating a

substance abuse prevention program is consistent with the aims of the school and their role. At a traditional school, teachers may feel that offering substance abuse prevention falls outside the school's mission of promoting academic success. Since the mission of many alternative schools is to provide a supportive community environment and to foster social and emotional growth as well as academic achievement, a prevention curriculum may be more easily integrated into this type of school environment.

Evidence-Based Substance Abuse Prevention in Schools

Historical Background

Early prevention efforts focused on arousing fear in children to discourage risky behaviors. Research later revealed that, although these approaches could influence behavior in the short-term, they did not effect long-term change (Evans, 1998). More recently developed prevention models aimed to change behavior by increasing knowledge about the risks associated with substance use. Similar in many ways to the fear arousal approach, the informational approach had no more success in changing long-term behavior, although this is an approach that is often used in school settings (Evans, 1998). Substance abuse prevention programs have evolved to incorporate social influence approaches to behavior change and teaching drug refusal and social skills. These approaches have demonstrated many more positive outcomes for preventing and reducing substance use than earlier approaches (Skiba, Monroe, & Wodarski, 2004). In fact, some earlier programs, such as the Drug Abuse Resistance Education (DARE) program were associated with increased substance use (Clayton, Cattarello, & Johnstone, 1991; Harmon, 1993).

There have been great improvements in substance abuse prevention efforts during the past 20 years. Various curricula have demonstrated their effectiveness at reducing risk for substance use in methodologically strong studies. Many of these programs are well manualized, making them easier to implement by staff in school settings (Greenberg, 2004).

Determining whether an intervention is evidence based is complicated by the many different definitions of evidence-based practice. For the purposes of this study, evidence-based practice is defined according to guidelines defined by the Substance Abuse and Mental Health Services Adminsitration (SAMHSA). These evidence-based practice guidelines are used here because the Keepin' it REAL curriculum implemented for this study has been evaluated by SAMHSA and determined to be a Model Program. SAMHSA determines whether a curriculum is evidence based by rating the intervention and its research support using the following criteria:

1. Outcome measures are selected based on a theoretical framework
2. Outcome measures have acceptable reliability and validity
3. The intervention and comparison conditions were implemented with fidelity in research trials
4. Comparison conditions performed better than no treatment
5. Confidentiality of participants was protected
6. Participants remained unaware of their treatment condition
7. Data collectors used standardized procedures
8. Data collectors were unaware of treatment conditions

9. The study design employed random assignment or controlled for covariates and confounding variables
10. Attrition was minimized or taken into account
11. Missing data was minimized or taken into account
12. Assumptions of statistical analyses were met
13. Analyses were consistent with the intervention's theoretical foundation
14. Findings did not contradict the theoretical foundation of the intervention or were adequately explained (SAMHSA, 2005)

The criteria are reviewed in detail in SAMHSA's National Registry of Evidence-based programs and Practices, available at http://modelprograms.samhsa.gov/template.cfm?page=nreppover (SAMHSA, 2005). Each program is reviewed by three independent reviewers and rated on a scale from zero to five in each of the categories listed above. The average score for the three reviewers must be at least a four in these categories to be considered effective. Model programs are those that score at least a four in these categories, are ready for dissemination, and provide technical assistance to implementers. Programs that are well-manualized, for example, are considered ready for dissemination (SAMHSA, 2005).

Most substance abuse prevention programs that have demonstrated positive outcomes in research trials share common characteristics. Tobler and associates (2000) conducted a series of meta-analyses that reveal similarities in effective substance abuse prevention programs. The curricula share similar characteristics in terms of content and structure. Effective content focuses on knowledge about social influences, practicing skills for drug refusal, and social competency. In terms of structure, effective curricula

are interactive, engaging teens in exercises and discussions to communicate information and build skills, rather than relying on lectures. In addition to being interactive, more effective programs combine information with teaching skills, such as refusal skills or social skills (Tobler et al., 2000; Tobler & Stratton, 1997).

In a systematic review of evidence-based prevention programs, Ennett et al. (2003) found ten universal prevention programs that were described as effective programs by the Centers for Disease Control and Prevention, SAMHSA's Center for Substance Abuse Prevention, and the US Department of Education. This research also indicated similarities in evidence-based programs. Delivery methods were primarily interactive, and content was driven by social influence concepts and included comprehensive life skills training (Ennett et al., 2003).

In addition to using social influence approaches to changing behavior, many effective programs are similar in duration, using ten or more sessions. Adding booster sessions after students receive the initial curriculum has proven effective, and incorporating community and media components, such as anti-drug messages, also appears to be helpful (Cuijpers, 2002).

SAMHSA conducted an analysis of the core characteristics of 17 evidence-based programs (Schinke, Brounstein, & Gardner, 2002). Analyses indicated that the following components were critical for the effectiveness of these programs:

1. Program content addressed general life skills or knowledge and skills related to substance use. None of the programs provided knowledge about substances alone.

2. Opportunities to practice newly learned skills were incorporated throughout the curriculum. These opportunities included modeling and practicing behaviors along with completing homework assignments, such as practicing skills at home with family members.
3. Effective programs emphasized the importance of family, school, and community support to create a culture that promotes shared accountability for change.
4. Curricula were delivered using a written manual that provided step-by-step guidelines for each session. Sessions were typically held weekly over the course of 9-12 weeks. Materials for these programs were easy to understand and required little or no training.
5. Programs promoted a consistent prevention message that was communicated by families, schools, and community members.
6. Programs focused on student strengths rather than deficits.
7. Programs that served ethnically and culturally diverse youth tailored materials for the target group and often used bicultural facilitators. Simply translating a curriculum into another language was insufficient in promoting intervention effectiveness with minority youth (Schinke et al., 2002).

In school settings, research indicates that among school staff who provided substance abuse prevention, only a small percentage (14.23 percent) used content or delivery mechanisms that have demonstrated effectiveness in substance abuse prevention research. Although over half of respondents indicated that they had used some effective content, which included knowledge, affective content, refusal skills, and general social

skills, few respondents used effective delivery mechanisms, such as an interactive teaching style (Ennett et al., 2003).

In another study, school staff providing substance abuse prevention in middle schools were questioned about specific substance abuse curricula that have been identified as effective by the Centers for Disease Control, The Department of Education, SAMHSA's Center for Substance Abuse Prevention, and the National Institute of Drug Abuse. Only about 27 percent of school staff indicated that they used one of the evidence-based prevention programs (Ringwalt et al., 2002).

Students indicated that they received prevention messages in school. Youth participation in programs addressing substance use increased in 2003, according to the 2003 National Survey on Drug Use and Health (NSDUH; SAMHSA, 2004). However, most school-based prevention messages were delivered as lectures or films in a class setting rather than engaging students in discussion and interactive activities. Therefore, most of the prevention programs offered to students were not consistent with research on evidence-based prevention (SAMHSA, 2004).

Substance Abuse Prevention in Alternative Schools

There is little research evaluating substance abuse prevention programs for alternative schools. However, the Project Towards No Drug Abuse curriculum is one example of a curriculum having strong research support for its effectiveness with alternative school students. Alternative school youth were heavily involved in creating the curriculum and providing feedback. Students participated in motivational activities, skill building, and decision making during nine sessions over the course of three weeks (Sussman, 1996; Sussman et al., 1997). The curriculum was evaluated with a diverse

sample of 1,500 boys and girls in alternative schools. Youth receiving the intervention experienced greater reductions in drug, alcohol, and cigarette use than youth in a comparison condition (Sussman, Dent, & Stacy, 2002).

Culturally Grounded Prevention

Few substance abuse prevention programs have been designed to meet the needs of a particular cultural or ethnic group, although research indicates that targeting a curriculum for a particular group can increase its effectiveness (Castro, Barrera, & Martinez, 2004; Kumpfer et al., 2002). Many school staff may consider an intervention developed and evaluated outside of their community with a different group of students irrelevant for students at their school. They may feel that prevention programs need to be tailored to better meet the needs of ethnic minority students (Botvin, 2004). Interventions that are not culturally grounded for a given community are unlikely to receive much support from key stakeholders, making it unlikely that the curriculum will ever be implemented and sustained (Castro et al., 2004). For this reason, staff either choose not to use evidence based practices or make substantial changes to evidence based protocols in an effort to improve the curriculum's fit with the students and school setting (Kumpfer et al., 2002).

A growing number of researchers are focusing on culturally grounded prevention because culturally grounded curricula may have a better chance of being implemented and sustained in community settings (Castro et al., 2004), This presents an interesting challenge for school settings that typically serve students from a range of cultural and ethnic backgrounds. Programs designed for school settings need to be multicultural, incorporating values of participating students. A program that is not culturally grounded

may alienate minority, non middle-class students. However, a program that incorporates the values from one ethnic minority group could also fail to meet the needs of the entire student population (Gosin, Marsiglia, & Hecht, 2003).

One of the difficulties in creating culturally grounded prevention is the complex and varied definition of culture. Culture has been defined as a set of shared customs, traditions, and values. Culture is often defined in research as primarily concerned with race and ethnicity, paying particular attention to ways in which ethnic minority culture differs from the majority culture (Castro & Hernandez-Alarcon, 2002). Cultural variables often described in substance abuse prevention research include familism, acculturation, ethnic pride and identity, spirituality, and other factors concerned with interpersonal relations and personal traits (Castro & Hernandez-Alarcon, 2002).

Most substance abuse prevention programs fail to address cultural issues or do so only superficially. They may target broad cultural groups or rely on stereotypical concepts associated with a particular culture, resulting in a program that may be more culturally grounded than others but fails to represent the daily experiences of the target audience (Castro & Hernandez-Alarcon, 2002; Gosin, Marsiglia, & Hecht, 2003). A program designed for Hispanic students, for example, may emphasize the value of familism, which research indicates is important in Hispanic culture. However, other values, such as wanting to be accepted by a peer group may be equally or more influential in determining whether a youth accepts a drug offer. If the curriculum fails to address this issue, it may have the advantage of being culturally grounded but will be ineffective in reducing risk for substance use. In order to be more culturally relevant, substance abuse prevention programs will need to capture more of the real life

experiences of their target populations in addition to incorporating commonly accepted cultural values that are often cited in literature (Castro & Hernandez-Alarcon, 2002). Research indicates that adolescents are more likely to respond to prevention messages when they see themselves in scenarios. Effective programs tend to reflect the culture and learning styles of the target audience (Gosin, Marsiglia, & Hecht, 2003).

A few existing evidence-based programs are culturally grounded in that they incorporate the values of minority groups. Brief Strategic Family Therapy was designed by the Miami Spanish Family Guidance Center for Hispanic families for use with Hispanic adolescents and their families. The intervention aims to change family dynamics, replacing negative interactions with positive ones. Research indicates that the program is effective in reducing behavior problems and risk for substance abuse (Castro & Hernandez-Alarcon, 2002; Szapocznick & Kurtines, 1989).

Preparing for Drug Free Years, also known as Families that Care, is another intervention that has been evaluated with minority youth. The program promotes abstinence from substance use by providing opportunities for positive social interaction, teaching drug resistance skills, and teaching parents family management techniques and conflict management skills. Participation in the program has been associated with decreased substance use, improvements in family communication, and improved anger and conflict management (Castro & Hernandez-Alarcon, 2002; SAMHSA, n.d.)

Another curriculum that has been evaluated with minority youth is the Strengthening Families Program. The curriculum aims to improve family cohesion and communication and reduce conflict. In research studies, the curriculum has resulted in

fewer behavior problems and reduced substance use (Castro & Hernandez-Alarcon, 2002).

These programs were developed for and evaluated with minority youth. However, because of variations within a cultural group, these interventions may not be culturally grounded for minority youth in every setting (Castro et al., 2004). Even though an intervention was evaluated with Hispanic youth in Miami, for example, regional, community, and organizational differences may result in a poor fit for the intervention in a community agency in Austin, Texas.

The core components of Keepin' it REAL were developed with the understanding that creating a culturally-grounded curriculum begins with incorporating cultural values, language, and symbolic representations. Stopping at this point, however, risks portraying "ethnic glosses" of culture because the representations of culture can be too simplistic or even stereotypical. Kumpfer and associates define culture as the "the total ways of living of a group" (Kumpfer et al., 2002), which encompasses a wide variety of factors that go beyond incorporating cultural values, language, and symbols. In an effort to go beyond portraying simplistic forms of culture, Keepin' it REAL was developed using narratives told by youth about their actual experiences including those that were connected with drug use and resistance strategies. This helps to ensure that the curriculum will not superficially portray cultural values but will be reflective of the actual life experiences of local youth (Hecht et al., 2003). This is important because research indicates that youth respond more favorably to curricula that reflect their culture and their social context by including their peers or teachers in scenarios that are used to provide curriculum material (Hecht et al., 2003).

Because schools serve students from a range of ethnic and cultural backgrounds, a curriculum that represents multicultural views is preferable to a curriculum grounded in a single culture (Hecht et al., 2003). The Drug Resistance Strategies project tested this hypothesis by evaluating a Mexican American version of Keepin' it REAL alongside a multicultural version of the curriculum and found that the multicultural version was more effective with participating youth from a range of ethnic backgrounds (Hecht et al., 2003).

For the purposes of this study, culture is defined broadly to include the youths' cultural values and life experiences and the culture of their school. This definition incorporates shared experiences among youth within a school setting as well as any other cultural values that influence their experiences. This is important because attending to culture as defined by race and ethnicity is insufficient to create a culturally grounded curriculum because Mexican American students in Austin may have a different culture from Mexican American students in Phoenix. In addition, the culture of a disciplinary alternative school may foster different life experiences than the culture of a different type of alternative school. By using this definition of culture, this study aims to create a curriculum that will not only be consistent with youth's cultural values and background but will also fit will within the school setting, which has its own cultural characteristics. The culture of the school creates the social context in which students use, resist, and make offers of substances.

School Culture

Although much of the literature on culturally grounded prevention focuses on race and ethnicity, an individual's culture consists of multiple layers. For school based

substance abuse prevention, the culture of the community and school are important factors to consider as well as the race and ethnicity of the students.

The school's organizational culture may explain why many schools are not using evidence-based practices. Research indicates that school culture can influence whether school staff are likely to incorporate new, innovative practices into their work with students (Glisson, 2002; Bowen, Rose, & Ware, 2006). Student from schools with open, collaborative cultures have better outcomes than those from schools with hierarchical cultures (Bowen et al., 2006; Lee & Smith, 1993). Students also perform better in schools in which staff collaborate in decision making and share a common view about their mission (Harris & Hopkins, 2000; Hofman et al., 2001; Keys, Sharp, Greene, & Grayson, 2003). Schools in which rules are developed collaboratively with students, and staff demonstrate respect for student differences are effective in reducing problems such as violence (Erickson, Mattaini, & McGuire, 2004). In positive school cultures, staff work together while respecting each other's differences (Hiatt-Michael, 2001). Teamwork not only includes working with other school staff but also involves working with students, parents, and community members (Bowen et al., 2006). Bowen and associates have labeled schools with the cultural characteristics described above as learning organizations (Bowen et al., 2006).

A culture of organizational learning is characterized by flexibility, acceptance of change, and openness to new ways of working toward organizational goals (Argyris, 1992; Bowen et al., 2006). Members of the organization accept new ideas and responsibility for the progress of the organization (Hiatt-Michael, 2001). Learning organizations are characterized by actions and sentiments that enable the organization to

value and use information from staff and other key stakeholders. This shared information is then used to plan, implement and evaluate strategies that help the school achieve its goals (Bowen et al., 2006). Actions are behaviors and interactions that demonstrate shared responsibility in achieving goals. Actions that support an effective school culture include teamwork, innovation, involvement with students, parents, and community members, sharing information, tolerance for error, and having a results orientation (Bowen et al., 2006; Bryk, Camburn, & Louis, 1999; Hiatt-Michael, 2001). Sentiments are defined as shared values, a sense of common purpose, and evidence of caring for each other among school staff. Sentiments that are consistent with learning organizations include a sense of common purpose, respect for each other, cohesion, trust, mutual support, and optimism (Bowen et al., 2006).

Creating Culturally Grounded Substance Abuse Prevention Programs

Because the concept of culture includes such a wide range of variables from race and ethnicity to organizational variables, creating culturally grounded prevention presents a daunting task. In order to capture the diversity of cultural factors that influence student behavior and outcomes, it is necessary to involve school staff and students in the process of creating culturally grounded appropriate prevention. Researchers need to understand how schools operate on a daily basis and the demands placed on school staff and students (Kaftarian, Robinson, Crompton, Davis, & Volkow, 2004). The result may be a prevention program that is unique for each school setting. Yet, to start from scratch with each school creating their own substance abuse prevention program is inefficient and risks disregarding years of substance abuse prevention research that demonstrates the effectiveness of certain strategies for a wide range of students. A better strategy may

involve maintaining core curriculum components of evidence-based substance abuse prevention while allowing students and staff the opportunity to personalize other parts of the program to make it more culturally grounded for them.

In order to incorporate the many cultural elements that characterize students' daily lives, Keepin' it REAL built the curriculum and videos from narratives created by the students themselves based on their experiences. The curriculum was built on the assumption that by telling the students their own stories while incorporating skill building and more accurate information about prevalence, teen attitudes and norms, the adolescents would learn new narratives that would encourage drug resistance. By incorporating the students' perspectives throughout the curriculum, it would be better grounded in their social, geographical, and cultural context (Gosin, Marsiglia, & Hecht, 2003). Many of the methods employed in Keepin' it REAL are consistent with Participatory Action Research, an approach that can be helpful in capturing the complex cultural characteristics of participants and incorporating them into the research process (Gosin, Dustman, Drapeau, & Harthun, 2003).

Participatory Action Research

Participatory Action Research (PAR) methods served as a foundation for creating the adaptation of Keepin' it REAL and planning the implementation and evaluation of the adapted curriculum, which is the focus of the study presented here. Although PAR has been used to refer to studies that employ varying levels of participant involvement, the underlying principal is collaboration between researchers and participants in developing goals and methods, data gathering and analysis, and implementing a change process that the participating group can direct or control (Kidd & Kral, 2005). PAR requires an

openness on the researcher's part to using participants' definitions of their needs and potential solutions (Kidd & Kral, 2005) and shared power in making decisions at every phase of the research process (Kelly, 2005). The researcher takes on the role of consultant and serves to facilitate rather than direct the research process (Gosin, Dustman, et al., 2003). This can mean making compromises in implementation and evaluation strategies because the researcher cannot necessarily impose the design that may be most rigorous if the participants indicate that such as design would be inappropriate. Conducting PAR does not mean, however, that the researcher is permitted to disregard issues of reliability and validity in the study design (Kidd & Kral, 2005). Including procedures to protect the methodological strength of the study is critical to ensure that time and money is not wasted conducting an evaluation that will provide little reliable and valid information about outcomes.

Hughes (2003) describes the strengths and limitations of both Investigator Driven Prevention Research (IDPR) and Participatory Action Research (PAR). IDPR typically employs strong methodologies, such as randomized experimental designs, which produce results with excellent reliability and validity and are perceived as generalizable to a larger population. However, the separation between the researcher and participants can result in misinterpretations of participants' needs, the selection of culturally-inappropriate methods, and the inaccurate interpretation of results. In contrast, PAR relies on both the expertise of the researcher and the participants in planning the study. Both researchers and participants make decisions about whether the study will be conducted and with whom, how the study will be conducted and produce knowledge, and how the knowledge obtained from the study will be used (May et al., 2002, as cited in Hughes, 2003).

The benefits of PAR include building participants' capacity to develop knowledge and skills and solve their own problems. However, because PAR studies typically do not employ experimental design methods but more qualitative methods and case studies, it is more difficult to definitively demonstrate program effectiveness (Hughes, 2003). In an attempt to take advantage of the benefits of both Investigator Driven Prevention Research and Participatory Action Research, studies can integrate the methods. In this type of research, the researcher's role is to bring to the table a discussion about the importance of strong research methods, evidence based practices, and a theoretical framework while incorporating knowledge from participants into every step of the research process.

Using Participatory Action Research methods can be an effective means of incorporating the cultural and learning styles of participants and providing a sense of ownership in the curriculum (Gosin, Dustman, et al., 2003), which have been associated with program effectiveness in community settings (Botvin, 1986; 2004; Gosin, Dustman, et al., 2003).

The development of Keepin' it REAL employed an integration of Investigator Driven Prevention Research and Participatory Action Research. The curriculum was developed in collaboration with local youth and teachers using focus groups and interviews to gather narratives about life experiences, substance use, and use of strategies to resist substance use in addition to information about the school settings in which the curriculum was to be delivered. These narratives informed the content and structure of the curriculum, including the use of the four resistance strategies: refuse, explain, avoid, and leave (Gosin, Dustman, et al., 2003; Hecht et al., 2003). PAR methods employed during the development and evaluation of Keepin' it REAL include the following:

- Interviews with middle school and high school age youth about their life experiences, substance use, and use of resistance strategies that informed curriculum design;
- Focus groups with teachers to evaluated the curriculum prior to implementation;
- Focus groups with teachers to evaluate the curriculum following implementation;
- Field testing the curriculum with students and obtaining student feedback;
- Engaging youth in the creation of videos for the curriculum;
- Maintaining ongoing contact and collaboration with facilitators during implementation.

The evaluation maintained aspects of research consistent with Investigator Driven Prevention Research methods (Hughes, 2003) by incorporating evidence-based curriculum components, such as skill building components informed by Social Learning Theory (Bandura, 1977). The intervention was also evaluated using an experimental design with a large sample of students from four middle schools (Hecht et al., 2003). In addition, the researchers monitored fidelity of program implementation by visiting sessions and completing observation forms that described the curriculum material used by the facilitator and the style of facilitation (Gosin, Dustman, et al., 2003; Hecht et al., 2003). The theoretical foundations of Keepin' it REAL as well as research used to develop and evaluate the curriculum are presented in detail in the next section.

Keepin' it REAL

Keepin' it REAL was developed with the aim of creating an evidence based culturally grounded prevention program. The project was developed by incorporating elements that research indicates are effective in substance abuse prevention programs, such as interactive teaching methods and social influence approaches to behavior change. The curriculum was founded on theoretical perspectives that guided a collaborative approach to curriculum development that would go beyond incorporating superficial cultural elements to create a program that would be truly culturally grounded for its target population. This means not only portraying traditional cultural values, but also depicting daily life experiences of the target population (Gosin, Marsiglia, & Hecht, 2003).

The Drug Resistance Strategies project created the Keepin' it REAL curriculum, implemented it in multiple school settings, and evaluated its effectiveness in delaying onset of substance use and reducing pre-existing use. The curriculum was designed to incorporate best practices from evidence-based prevention research and elements that would make it culturally grounded for school settings that have large Mexican American populations. It includes components that teach youth communication and life skills for resisting peer pressure to use drugs, alcohol, and cigarettes. It employs interactive teaching methods, such as role plays and group discussion to engage youth in participatory learning. In developing the curriculum, adolescents from different ethnic backgrounds were asked to provide narratives from their own experience that were used to create scenarios and role plays for skill building components of the curriculum. In addition, the videos that accompany the curriculum and were created by youth (Gosin, Marsiglia, & Hecht, 2003).

Keepin' it REAL is grounded in the assumption that different adolescents may prefer different strategies for refusing substances. Preliminary research for the Drug Resistance Strategies project identified four strategies that can be used to resist substance use: Refuse, Explain, Avoid, and Leave. The refuse strategy involves using simple statements to refuse a drug offer. Students who are not comfortable with simply saying no may choose to use the explain strategy which involves explaining reasons for refusing. Avoiding substance use involves anticipating activities in which substances are likely to be offered and avoiding these activities, while the leave strategy teaches youth to leave a situation in which substances are being offered (Alberts, Hecht, Miller-Rassulo, & Krizek, 1992).

The Keepin' it REAL curriculum includes six core conceptual components:

1. Incorporating ethnic variations in communication strategies
2. Using students' narratives to promote their identification with curriculum content
3. Learning about injunctive, personal, and descriptive norms that motivate substance use
4. Learning social skills and their use in risk assessment and decision making
5. Learning four drug resistance strategies often used by adolescents
6. Grounding the curriculum in risk and resiliency factors tied to the adolescents' social context (Gosin, Marsiglia, & Hecht, 2003).

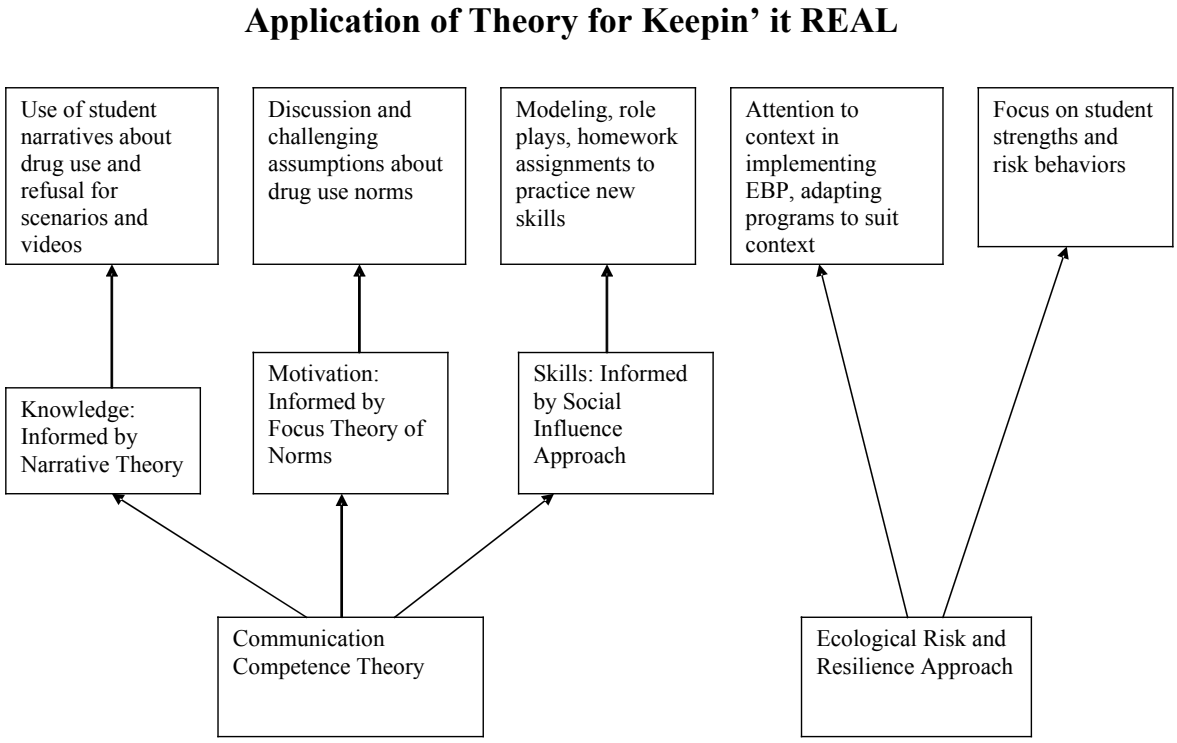
The original curriculum consisted of ten classroom-based sessions, five of which included a video. The first video introduced the curriculum and emphasized the central role that students' narratives played in creating the curriculum. One video illustrated each

of the four resistance strategies. Every lesson included information and discussion about a new topic accompanied by role plays or other participatory activities. Homework assignments also accompanied each session (Gosin, Marsiglia, & Hecht, 2003).

Theoretical Foundations of Keepin' it REAL

The theoretical foundation for Keepin' it REAL integrates Communication Competence Theory (CCT) and the Ecological Risk and Resiliency Approach (ERRA). CCT provides a framework for developing a curriculum that relies on building competence through interaction with others in which youth re-evaluate norms and practice new communication skills. CCT guides the incorporation of curriculum components that reflect the experiences of target youth, reflect target youth's perception of norms related to substance use, and are consistent with evidence based approaches to risk reduction and behavior change (Spitzberg & Hecht, 1984). ERRA guides the process of examining the context in which target youth are offered substances and collaborating with youth to ensure that the curriculum reflects their experiences. These theoretical perspectives are illustrated in Figure 2.1 and are described in detail below. The figure illustrates the components of Keepin' it REAL that were grounded in each theoretical perspective.

Figure 2.1



Communication Competence Theory

Communication Competence Theory (CCT) serves as the theoretical foundation for each component of the Keepin' it REAL curriculum. CCT argues that competence requires three components: knowledge, motivation, and skills. Impressions about interpersonal relations and desired behavioral outcomes are the result of competent communication that incorporates all three components (Spitzberg & Hecht, 1984). Keepin' it REAL provides opportunities for students to engage in developing competency in each of the three areas as applied to substance abuse prevention.

For Keepin' it REAL, additional theoretical approaches are used to operationalize each component of CCT. Knowledge is conceptualized as knowing information about substances and their effects as well as the context in which substances are offered. The concept of knowledge is further informed by Narrative Theory, described below. A youth's understanding of peer norms and consequences of substance use, and their desire to resist substance use define their level of motivation. Concepts from the Focus Theory of Norms are used to conceptualize motivation as driven by social norms. Skills are understood to be refusal skills as well as general social and communication skills. Social influence theory guides the incorporation of modeling and practicing skills based in youths' own experiences (Hecht et al., 2003).

Knowledge. In Communication Competence Theory, knowledge is defined as knowledge about the context in which conversations take place, the individual(s) engaged in the conversation, and the topic of discussion. The more knowledge students have in each of these areas, the more likely they are to engage in the conversation in a competent way (Spitzberg & Hecht, 1984). In substance abuse prevention programs, such as Keepin' it REAL, the knowledge component of competence is operationalized as knowledge about substances and their effects as well as the contexts in which substances are used and offered.

In developing Keepin' it REAL, Narrative theory guided the process of building knowledge. Student narratives were used to create exercises and videos for the curriculum and engage a diverse group of participants. According to Narrative Theory, narratives are the discourse through which people come to understand their experiences and communicate them to others (Mankowski & Rappaport, 1995). Although the term

narrative is used for many approaches to treatment and data collection, in community psychology, narratives are shared stories. They may be stories shared by a family, community, organization, or cultural group. Individuals within a community may incorporate shared narratives into their own personal narratives that give meaning to their experiences. Personal narratives may also be altered because of exposure to shared narratives (Mankowski & Rappaport, 1995).

Narratives are also motivators. Community narratives may provide meaning to an individual's work and actions. These narratives explain to individuals and others the reasons for behavior (Harper et al., 2004). Researchers working in close collaboration with community members can assist in creating new narratives. This approach has been used to reduce risk in communities at risk for HIV and teen pregnancy as well as communities at risk for substance abuse (Harper et al., 2004; Gosin, Marsiglia & Hecht, 2003). In these cases, individual interviews revealed community narratives that defined youth's ideas about risk behavior and scripts used to communicate with others about sex or substance use.

For adolescents, narratives provide a means of explaining their behavior and experiences. Narratives also allow adolescents to think about experiences that may occur in the future. When applied to creating a culturally grounded drug resistance strategies program, narrative theory allows for the possibility that adolescents can use their own experiences to create narratives about events that may happen in the future. The intervention aims to help youth create new narratives that empower them to make healthy decisions and avoid risk taking (Harper et al., 2004). In the case of Keepin' it REAL, narratives from community youth were used to create scenarios for the curriculum. By

discussing the scenarios as a group, evaluating potential responses to the situation, and learning and practicing new skills to guide behavior, the curriculum guides students through a process of creating new narratives in which they will respond to a situation differently than they had before. Because these narratives are grounded in their real life experiences, they provide tools for learning (Holleran, Dustman, Reeves, & Marsiglia, 2002). For Keepin' it REAL, adolescents created narratives that are used as the basis for video scripts and scenarios for skill building exercises.

Developers of Keepin' it REAL interviewed students about their experiences with substance use and use of strategies to resist substance use. From these interviews, the developers created scenarios that incorporated the students' experiences, environment, and language. For example, some students described scenarios in which a close friend offered them a drug such as marijuana. Students indicated that they did not want to accept the offer but did not want to compromise the friendship either. In these cases, students often described giving an explanation for refusing the drug offer to avoid offending their friend. Scenarios were written for the curriculum that incorporated the situations and language used in these situations. These scenarios were then used as the basis for role play exercises or other activities in which students read a scenario as a springboard for discussion (Holleran et al., 2002).

Motivation. Motivation is defined as perceived costs and benefits that will result from engaging in communication. Based on these costs and benefits, an individual will be more or less motivated to engage in conversations (Spitzberg & Hecht, 1984). The Focus Theory of Norms informs Keepin' it REAL's concept of motivation. Norms have long been understood to influence behavior. Views about normative behavior serve as

motivators for behaving in a certain way. The focus theory of norms distinguishes between descriptive, injunctive, and personal norms. Whereas descriptive norms are concerned with people's actual behavior, injunctive norms define how people ought to behave. Descriptive norms are important in influencing behavior because people may observe what others are doing and imitate it. Personal norms are defined as a person's concept of he/she should act, which can be determined independently of the other types of norms (Cialdini, Reno, & Kallgren, 1990).

Implicit in acting based on descriptive norms is the idea that if most people are engaging in a particular behavior, it must be normal and appropriate. Injunctive norms are more concerned with an individual's beliefs about what is moral or socially approved behavior. These norms often co-exist in influencing behavior because behaviors that are commonly observed are also often socially accepted as moral. However, frequently, one type of norm may be observed to influence behavior without the other, and both can individually influence behavior (Cialdini et al., 1990). In the case of Keepin' it REAL, students engage in dialogue about their perceptions of normative behavior related to substance use. They learn to question the difference between actual behavior, socially accepted behavior, and the behaviors they believe are right for them. Each session includes an exercise that encourages students to think critically about normative behavior and the difference between behavior that is common among their peers but may not be consistent with their own goals and values. For example, students are asked to complete a worksheet in which they identify personal values and discuss them with a partner. Students, then, engage in an activity in which they read and discuss scenarios describing situations in which they are asked to do something inconsistent with their values.

Skills. Skills are defined as communication skills, which allow an individual to successfully communicate with someone else. Skills are divided into five areas: anxiety, immediacy, expressiveness, interaction management, and other orientation. Behaviors, such as shaking, excessive sweating or a speaking in a shaky voice, are indicative that an individual may require skills in managing social anxiety (Spitzberg & Hecht, 1984). Immediacy is defined as behavior that indicates interest and attentiveness, such as standing in close proximity, body posture, and eye contact. Individuals who are animated, express appropriate affect, and are facially expressive are said to have expressiveness skills. Interaction management skills are observed as taking turns speaking in a conversation and minimizing interruptions and delayed responses to others in a conversation. Other orientation skills are concerned with listening well, expressing empathy and concern, and providing feedback (Spitzberg & Hecht, 1984). Skill building in Keepin' it REAL and other substance abuse prevention programs includes activities designed to increase awareness about verbal and non-verbal communication strategies. Students discuss and practice techniques for communicating their intentions and motivations for behavior.

Skill building components are grounded in social influence models. Closely related to social learning theory, social influence models of substance abuse prevention emphasize learning resistance skills for preventing substance use and building communication and problem solving. They address knowledge, attitudes, and behaviors that are relevant to decreasing risk for substance use (Skiba, Monroe, & Wodarski, 2004).

Social influence models apply the concept of inoculation to reducing risk behavior (Skiba et al., 2004). As with inoculation for disease, individuals are exposed to

small doses of risky situations in order to practice building resistance skills. The primary goal is to develop the necessary skills to allow adolescents to resist risky behavior when confronted with a similar situation in their daily lives. Typically adolescents are exposed first to situations that are the least risky, such as resisting peer pressure to be unfriendly to a new student, and apply newly learned skills to these situations. Gradually, they are exposed to more risky situations, such as those that simulate an offer by a peer to use substances, and apply the same skills to these more risky situations.

Social influence approaches to substance abuse prevention typically include the following steps: 1) Providing information about the negative effects of behavior; 2) Providing information about social influences on behavior; 3) Challenging norms and expectations that risky behavior is normal are challenged; 4) Modeling, practicing new skills, and reinforcement are used to encourage use of resistance strategies (Botvin, 1999; Evans, 2001). In the Keepin' it REAL curriculum, social influence approaches inform exercises, such as role plays in which students act out scenarios created from student narratives. Students are provided with information about the four resistance strategies. For each strategy, students engage in activities that allow them to practice the communication skills. They are often asked to practice using the skill in a low-risk situation, such as refusing an offer of food they do not want to eat, and progress to using the skills in more risky situations, such as when they are offered a substance by a friend or family member.

The Ecological Risk and Resiliency Approach (ERRA)

While Communication Competence Theory informed the process of developing the structural components of Keepin' it REAL, ERRA informs the process of grounding

Keepin' it REAL in the context of the target population and incorporating a focus on strengths. The approach resulted from a synthesis of two theoretical approaches: the epidemiological risk focused approach and the protective factor etiological approach. The model is grounded in research on risk and protective factors in youth. Research on risk factors provides evidence that certain risk factors or combinations of risk factors increase the likelihood of poor outcomes, such as school failure, substance use, and risky sexual activity (Bogenschneider, 1996). The risk factors approach originated in the medical field from researchers studying the causes of disease and epidemics. The aim of this research was to target risk factors, such as high blood pressure and lack of exercise, that lead to health problems (Bogenschneider, 1996; Hawkins, Catalano, & Miller, 1992).

When applied to the behavioral sciences, the risk factors approach fails to explain why some youth with one or more risk factors do not experience poor outcomes. For example, Rutter (1979) found that study participants with one risk factor, such as low income, had similar outcomes to participants with no risk factors. Participants with more than one risk factor, however, had a much greater incidence of poor outcomes. Studies of teen substance use have also found that the presence of only one or two risk factors may not predict poor outcomes (Bogenschneider, 1996; Newcomb, Maddahain, & Bentler, 1986).

On the other hand, the protective factors approach postulates that strengths and resources protect youth from poor outcomes. Yet, there are many youth with protective resources, such as adequate family income and two-parent households, that experience poor outcomes. There is less research documenting the importance of protective factors. This line of inquiry developed primarily through research on children with disabilities or

those experiencing hardships including abuse, family conflict, and alcoholism. This research indicated that risk factors were mediated by protective factors. Studies have documented, for example, that children whose parents are divorced but who maintain strong positive relationships with at least one parent have better outcomes than those who do not have such positive relationships (Bogenschneider, 1996; Rutter, 1983). By combining these two perspectives, ERRA explains that behavior is the result of a combination of risk and protective factors. Both are important in affecting outcomes (Bogenschneider, 1996).

Regarding prevention programs, ERRA emphasizes the importance of reducing risk and building protective factors using prevention programs that are consistent with the particular needs of youth in a given community. The approach also integrates ecological theory to emphasize that prevention activities occur within a community context that includes many ecological levels, such as family, peers, school, and community. The context and culture in which youth receive prevention services has a large impact on the ability of those programs to affect behavior. The approach identifies the following principles that are important for building prevention programs that will be appropriate for a particular community context:

- Identify issues or problems faced by youth in the community
- Define specific goals that target risk and protective factors tied to identified issues or problems
- Address risk and protective factors at multiple ecological levels, such as individual, family, school, and community

- Collaborate with key stakeholders in planning and implementing a prevention program
- Educate key stakeholders about relevant research and theory that can inform community prevention activities
- Form a plan that focuses on reducing risks identified in the community and building protective factors that are not already in use
- Involve the target youth group in designing, planning, and implementing a program
- Be sensitive to culture, ethnicity, and values that are important within the community in planning a program, since much research on risk and protective factors has been conducted with White, middle class samples
- Implement prevention activities as early as possible so youth will be exposed to programs before developing a serious problem and intervene continuously after implementation
- Choose prevention strategies that are developmentally appropriate for the target youth group
- Anticipate changes that may occur in other systems, such as families or peer groups, as a result of implementing prevention activities in one system, such as a school.
- Evaluate the effectiveness of prevention activities (Bogenschneider, 1996).

Keepin' it REAL applies this theoretical model to substance abuse prevention. In developing the program, researchers engaged key stakeholders in the community and involved youth in customizing the curriculum. Students' stories were used to create

scenarios and role playing exercises for skill building components, and students created videos to accompany the curriculum. In addition, the researchers studied the values of the community to inform the research. For example, pilot data indicated that Hispanic youth were uncomfortable refusing a drug offer without offering an explanation that would protect the feelings of the person making the offer. Although the curriculum addresses risks, it focuses heavily on student strengths (Hecht et al., 2003). It also aims to reduce risk among youth by replacing incorrect assumptions about consequences of substance use and norms with accurate information and engaging youth in activities to assess risk and anticipate risky situations. At the same time, the program increases protective factors through skill building and providing accurate information (Hecht et al., 2003).

Cultural Competence Theory and the Ecological Risk and Resiliency Approach are integrated in the Keepin' it REAL curriculum. CCT guides curriculum structure by emphasizing the importance of building knowledge, motivation, and skills as well as the central role of relationships and communication. ERRA guides the process of grounding the curriculum in the cultural context of the target youth group and collaborating with those in the community to ensure that the curriculum is well-suited to address substance use among their youth. The ERRA approach encourages participatory research in which researchers collaborate actively with key stakeholders and members of the target population (Alberts et al., 1992).

Research on Keepin' it REAL

Curriculum Development

The Drug Resistance Strategies Project was implemented with the purpose of developing, implementing, and evaluating a culturally grounded prevention program. The

first phase of the project employed focus groups and interviews with two groups of adolescent participants (N=33 and N=69). In the focus groups, adolescents discussed resentment of prevention programs they had experienced and expressed frustration about programs that did not reflect their perspectives, experiences, and language. In interviews, participants discussed their experiences resisting substance use. Content analyses of the interviews indicated that participants identified four resistance strategies: Refuse, Explain, Avoid, and Leave (Alberts, Miller-Rassulo, & Hecht,1991).

Another study employed in-depth interviews with middle school students in Phoenix, Arizona. Students were asked if they had been offered substances and to describe the circumstances of the offer. Analyses of the interviews again revealed four main resistance strategies: Refuse, Explain, Avoid, and Leave. Refuse, or simply saying no, was used for 80% of drug offer scenarios. The second most common response was Leave (16%), followed by Explain (7%) and Avoid (4%). Chi square analyses revealed gender differences in resistance strategies, types of substances offered, the setting in which substances were offered and the individual making the offer. Hispanic students were more likely than non-Hispanic students to use the Explain strategy (Alberts et al., 1992).

Evaluation of Keepin' it REAL

Keepin' it REAL was evaluated in a large scale study which included 35 schools and 6,035 middle school students (3,318 Mexican or Mexican American, 1,141 other Latino, 1,049 non-Hispanic White, and 527 African American). The study aimed to determine whether the curriculum effectively reduced risk for substance use and whether the culturally grounded components of the curriculum increased its effectiveness with

students from various cultural groups. For this reason, three different versions of the curriculum were implemented: a Mexican American version; a non-Hispanic version; and a Multicultural version. A single non-Hispanic version of the curriculum was designed because there were insufficient numbers of non-Hispanic White and African American students to allow for separate versions of the curriculum designed for each group. For each of these versions, narratives from the target ethnic group(s) were used in developing skill-building exercises and videos. The videos, one illustrating each of the resistance strategies, were made by students from various cultural backgrounds as well. In addition, the researchers incorporated values commonly associated with the targeted cultural group in the literature. The multicultural version incorporated five sessions from each of the other two curricula (Gosin, Marsiglia, & Hecht, 2003).

For the evaluation of Keepin' it REAL, entire schools were assigned randomly to receive one of the three versions of the curriculum or participate in a comparison condition which received none of the curricula. The study evaluated the curricula over a 3-year period. Participants completed questionnaires that assessed behavior, such as frequency and amounts of drug, alcohol, and tobacco use and use of resistance strategies, as well as psychosocial variables, such as self-efficacy, expectancies, and norms. Results indicated that students participating in any version of the curriculum experienced better outcomes for drug resistance than those who received no version. Both the Mexican American and Multicultural versions of the curriculum performed better than the non-Hispanic version. Students receiving any version of the curriculum reported better use of resistance strategies, lower use of gateway substances (alcohol, cigarettes, and marijuana), and were less likely to transition to using more serious substances than those

who did not receive the curriculum. Students receiving the Mexican American version of the curriculum reported beneficial changes in personal norms and reductions in substance use. Participants receiving the multicultural version reported significantly better use of resistance strategies, improvements in substance use expectancies and reports of friend's norms than those in the comparison condition. These improved outcomes were maintained 14 months after participation in the curriculum (Gosin, Marsiglia, & Hecht, 2003).

Results indicate that there were few significant differences for students who were matched culturally with the curriculum implemented at their setting. For example, Mexican American students who received the Mexican American version did not have significantly better outcomes for the most part than non-Mexican American students receiving the same curriculum.

Another study evaluated the effects of the Keepin' it REAL curriculum on students who reported using substances (Kulis, Nieri, Yabiku, & Stromwall, 2005). The data for this study was collected as part of the large multi-year study described above and therefore employed the same procedures. Participants for this study included students who reported using alcohol, marijuana, or cigarettes in the last 30 days prior to participation in the study. Results of the study indicated that students who participated in the Keepin' it REAL curriculum were significantly more likely to report reduced or discontinued use of alcohol than students who did not receive the curriculum. Participation in the curriculum was also associated with discontinued substance use for those who had reported using a combination of alcohol, cigarettes, and marijuana. There

were no significant program effects on students who had reported using only cigarettes or marijuana prior to receiving the curriculum (Kulis et al., 2005).

Video Ethnography

A video ethnography was conducted to explore the process of making videos that accompany the Keepin' it REAL curriculum. Ten students participated in this pilot study, which involved videotaping concept development, script writing, auditions for the video, and production sessions. Researchers also recorded observations and interpretation of events in journals. Students who participated in the project were interviewed about their experience. Data from the videos, journals, and interviews revealed that the group struggled to maintain equal group participation, since White students more often took a leadership role in activities. The facilitator, a professional film-maker, also had difficulty allowing student ideas to guide the process. The study illustrates the challenges in encouraging participation of a diverse group of students in creating a culturally grounded program and in maintaining a student-focused approach (Holleran, Dustman, Reeves, & Marsiglia, 2002).

Pilot Study Exploring Responses to Keepin' it REAL in Texas

In order to determine whether the Keepin' it REAL curriculum might be culturally appropriate for adolescents in Texas, Holleran and associates (2005) conducted a pilot study in which 72 adolescents watched two videos developed for the original Drug Resistance Strategies Project which evaluated Keepin' it REAL program: a Mexican American version; a non-Hispanic version; and a Multicultural version. The pilot study was conducted in three settings: a homeless youth shelter, an alternative school setting, and a community program that serves low income youth. One of the videos was

developed primarily by non-Latino youth and the other reflected the involvement of more Latino youth. Students were asked to complete a questionnaire about their perceptions about the videos before and after watching the videos. They also participated in a focus group after watching the videos (Holleran, Taylor-Seehafer, Pomeroy, & Neff, 2005).

Findings from the study indicated that youth felt both videos needed to depict situations that seemed "more real". They preferred the Latino video, saying that it was more interesting and more realistic. At the homeless youth shelter, youth said that the videos did not "capture the horrors" of substance use for homeless youth. Adolescents at the community center said that the videos needed to depict more "realistic" situations and indicated that parts of the non-Latino video were "stupid". At the alternative school setting, adolescents said that the videos would be improved by portraying kids "more like us" and said they would prefer testimonies about real life experiences rather than acted out videos. Although this was a small, exploratory pilot study, the findings suggest strongly that youth in these settings did not feel that the Keepin' it REAL videos adequately reflected their experiences, and youth at each setting had different ideas for improving the videos for their setting and peers (Holleran et al., 2005).

Phase I: Creating Adaptations of Keepin' it REAL

The research described in this report is part of Phase II of a larger study conducted by Lori Holleran and funded through a K01 grant [1K01 DA017276-01] awarded by the National Institute on Drug Abuse (NIDA). Phase I of the study has been completed with 72 youth from four alternative high schools, a homeless youth shelter, and community-based program serving low-income youth. Phase I employed a one-group pretest posttest design which engaged youth and staff at each site in the process of

creating adapted videos and workbook materials that would accompany the core Keepin' it REAL curriculum. The purpose of the study was to infuse these materials with the culture of the youth at each site in order to make the curriculum more appropriate for older youth between the ages of 14 and 19 and to capture the nuances of culture that differ for youth in different types of settings, such as homeless youth shelters and alternative schools. Each site made their own materials which were used in the adapted version of the curriculum evaluated in Phase II and, therefore, in the study presented here (Holleran & Hopson, 2006).

Students were administered questionnaires similar to the ones used for this study at pretest and posttest and completed focus groups at pretest and posttest. T-tests were conducted to examine whether there were changes in alcohol or marijuana use between pretest and posttest. There were no significant differences, but means indicated slight decreases in alcohol and marijuana use at posttest (Holleran & Hopson, 2006). Although the focus groups are still undergoing analysis to define primary themes, preliminary analyses of focus groups suggest the following:

- The Keepin' it REAL curriculum is best for younger participants (middle school) and those who are not yet heavy users.
- Prevention with this age group is an "up hill battle", and prevention programs should target high school freshman or should be used during transition years from elementary to middle school and from middle school to high school.
- Testimonials from actual users are better than skits for videos.
- Youth said that the videos they created were more realistic than the original videos.

- Popular substances included marijuana ("green tobacco"), alcohol (considered one of the worst substances), pills ("bars"), heroin, crack, cocaine, and mushrooms.
- Marijuana and pills were generally not considered dangerous; alcohol, heroin, crack, and cocaine were considered dangerous; Mushrooms were considered dangerous by some but not by others.
- Reasons for substance use include boredom, curiosity, experimentation, socializing, rebelliousness, peer pressure, wanting to feel good, coping, and parents' use.
- Protective factors for preventing substance use include family and parent openness to discussion, attitude, school activities, parental involvement, personal experiences and witnessing other's experiences, future orientation, using resistance strategies (mostly "explain"), and talking with parents.
- Consequences that cause youth to reconsider substance use include sickness, death, getting caught, loss of parents' trust, or loss of friends (Holleran, 2006).

Table 2.1 provides a summary of studies on Keepin' it REAL.

Table 2.1

Research on Keepin' it REAL

	Study Description	**Sample**	**Analysis**	**Outcomes**
Albert, Miller-Rassulo, & Hecht, 1991	Focus Groups and Interviews	33 high school students	Content Analysis	Content analysis revealed that youth use four resistance strategies to refuse a drug offer. Drug offers were likely to be made by friends at home or at a social gathering.
Alberts & Hecht, 1992	Focus Groups and Interviews	69 high school students	Content Analysis	Content analysis revealed that youth were likely to respond "no" to a drug offer but tended to offer a reason for refusing an offer of alcohol. When confronted with greater pressure to use, youth tended to respond with more resistance strategies
Hecht, Marsiglia, Elek, Wagstaff, Kulis, & Dustman, 2003	Quasi-experimental pretest posttest follow-up design with equivalent control group and 2 year follow up; Conditions included A Mexican American version of the curriculum, a combined African American and Anglo version, and a multicultural version	6,035 middle school students	Generalized Estimating Equations (GEE), correlation, regression	Students receiving any version of the curriculum reported better use of resistance strategies and lower use of gateway drugs than comparison group students. The Mexican American version of the curriculum was associated with positive changes in personal norms and reduced drug use. The multicultural version was associated with better use of resistance strategies and improvements in drug use expectancies and reports of friend's norms.

Kulis, Nieri, Yabiku, & Stromwall, 2005.	Quasi-experimental pretest posttest follow-up design with equivalent control group and 2 year follow up.	1,364 middle school youth who report drug use	Discrete time-event history methods	Youth participating in Keepin' it REAL reported decreases in alcohol use and gateway drugs compared with those who did not receive the curriculum.
Holleran, Reeves, Dustman, & Marsiglia, 2002	Ethnography	10 high school students	Content analysis and constant comparison	Difficulties maintaining equal group participation and allowing student ideas to guide the process.
Holleran, Taylor-Seehafer, Pomeroy, & Neff, 2005	Focus groups and questionnaires on reactions to Keepin' it REAL videos, acculturation, and drug use	72 adolescents from an alternative school, a homeless youth shelter, and a community program serving low-income youth	Content Analysis, correlation	Youth felt videos needed to better depict their experiences; African American participants reported significantly less use of cocaine and marijuana than other ethnic groups. Over 80 percent of White and Latino students reported use of alcohol and marijuana.
Holleran, 2006	Focus groups and questionnaires on drug use	72 adolescents from four alternative schools, a homeless youth shelter, and a community program serving low-income youth	Content Analysis, T-test analyses	Youth felt that prevention is difficult for their age group and should be used with younger students; Videos they created were more realistic than those that accompany the original curriculum; Testimonials are better than skits for prevention with their age group. Decreases in alcohol and marijuana use were not significant.

It stands to reason that the success of the Keepin' it REAL curriculum is tied to its foundation in well-researched approaches to behavior change, such as building

knowledge, motivation, and skills. Equally important, however, is the process of collaborating with key stakeholders and youth in the community to ensure that the curriculum addresses their particular needs. This means that the Keepin' it REAL program may be culturally grounded for the community it was designed to serve but could be improved for other communities by collaborating with their key stakeholders to make the curriculum more appropriate for their youth. This may necessitate addressing different substances, different scenarios in which substances are offered, different family situations, and different value systems.

Program Adaptation and Effectiveness

Two schools of thought dominate the literature regarding implementing evidence based practices in community settings. Much of the literature focuses on the importance of fidelity in implementing effective curricula. Research supports the idea that interventions implemented with a great deal of fidelity have better outcomes than those in which implementers diverge from protocols (Blakely et al., 1987; Botvin et al., 1995; Elliott & Mihalic, 2004). Another body of literature argues that community settings should be allowed to adapt curricula to meet their specific needs (Castro, Barrera, & Martinez, 2004). This idea has gained popularity in the face of evidence demonstrating that, although many research dollars have been spent developing and evaluating evidence-based programs, few community settings that serve youth are likely to use these interventions and in the rare cases that they do, the curricula are not implemented with fidelity (Castro, Barrera, & Martinez, 2004).

Interventions that are not culturally grounded for a given community are unlikely to receive much support from key stakeholders, which makes it unlikely that the

curriculum will ever be implemented and sustained. One possible means of furthering the adoption of evidence based practices is to create a structured adaptation process that maintains core, evidence based components of effective curricula while allowing communities to tailor the intervention to meet their needs (Castro, Barrera, & Martinez, 2004).

Studies and research reviews that examine substance abuse program implementation often indicate that prevention programs are rarely implemented with strict adherence to the curriculum (Backer, 2001; Bergman and McLaughlin, 1978; Flay et al., 1987; Gottfredson & Gottfredson, 2002). Reasons for poor fidelity in schools include lack of training and support, inadequate resources, large class size, low morale and burnout among teachers and school staff, and insufficient time (Botvin, 2004). An additional barrier to program fidelity is a need to adapt programs to meet the unique needs of a particular school and student population. Teachers and administrators often argue that prevention programs needed to be tailored to better meet the needs of ethnic minority students (Botvin, 2004).

Program adaptation is defined as any deliberate or accidental modifications, such as deleting or adding components, changing the nature of components, changing the way the program is administered, and cultural modifications to the program (Backer, 2001). In schools, adaptation often occurs when the teacher or staff member implementing the curriculum makes changes due to personal preferences, time constraints, a need to engage students, or an attempt to make the curriculum more developmentally appropriate for students (Pentz, 2004). They may choose to use replace interactive components with lectures, for example.

Core components of a curriculum are elements of a program that theory and research demonstrate are likely to explain its main effects (Backer, 2001). Being able to identify and communicate a program's core components is critical in a school setting. Teachers and other school staff have limited time to learn and implement substance abuse prevention curricula (Pentz, 2004). Understanding the program's core components will help ensure that school staff will not sacrifice the elements that make the program effective if they make changes.

Successful implementation of evidence-based programs requires a combination of top-down and bottom-up approaches. Researchers communicate information about research and program design, while community members inform researchers about the specific needs of their community and values (Kumpfer et al., 2002). Guidelines for successful program adaptation include defining parts of the program that can be adapted and parts that should remain unchanged, assessing a program's theoretical base and core components to ensure that adaptations remain faithful to them, assessing necessary resources and training required for successful implementation, consulting with the director of the curriculum, involving the community, and documenting adaptation efforts (Backer, 2001; Castro, Marrera, & Martinez, 2004).

The Adaptation Process

There is little research to guide the process of adaptation. It is difficult to know which adaptations will make the curriculum more culturally grounded without compromising the program's effectiveness. As discussed earlier, some evidence-based curricula have been successfully adapted for use with particular ethnic groups. These include Brief Strategic Family Therapy, Preparing for the Drug-Free Years Program, and

the Strengthening Families Program (Castro & Hernandez-Alarcon, 2002). Keepin' it REAL was intended from inception to address the needs of ethnic minority students, especially Mexican American youth, in a school setting.

Although there is little existing research that examines the process of adapting evidence-based programs, there are examples in the literature of proposed methods for creating standardized adaptation procedures that are likely to retain the core components of effective programs. One project that has standardized adaptation procedures is Project Northland, a multi-component alcohol prevention program (Komro et al., 2004). The curriculum was originally created and evaluated to prevent onset of alcohol use by sixth to eighth grade students in rural Minnesota. The adaptation of Project Northland aimed to make the program appropriate for ethnically diverse urban youth. The adaptation included changes to surface structure, which involved matching intervention materials to the population, and deep structure, which involved incorporating cultural, social, historical, environmental, and psychological factors that influence the behavior of the target population. Adaptations included creating more culturally appropriate role plays and activities to match the target population's culture and reflect urban-life situations, creating new audiotapes using African American and Hispanic actors, and scheduling activities during the day rather than at night. A separate adaptation was created for students at sixth, seventh, and eighth grades (Komro et al., 2004).

Prior to planning an adaptation, researchers conducted a literature review about the target population and alcohol use, created a community advisory committee to advise the research team, conducted neighborhood and community assessments, translated intervention materials, incorporated opportunities to obtain participant feedback,

conducted focus groups, and pilot tested each adaptation using direct observation, feedback from teachers, and focus groups with students. Although data from a large-scale investigation of program effectiveness is not yet available, preliminary data from focus groups, teacher feedback, and classroom observations indicate a positive response to intervention materials from teachers and students (Komro et al., 2004).

Applying Participatory Action Research to the Adaptation Process

The adaptation of the curriculum for this study built on the work of Keepin' it REAL developers who incorporated the cultural values and life experiences of participating youth to create a culturally grounded prevention program. In order to make the program more appropriate for culturally diverse youth in alternative schools in Austin, Participatory Action Research methods were used to engage students at each site in creating a culturally grounded adaptation of Keepin' it REAL for their youth. This process aimed to capture more nuanced aspects of youths' cultural context that may not be portrayed in a curriculum designed for their ethnic group as a whole (Holleran & Hopson, 2006).

The adaptation aimed to recreate some of the process used to develop the Keepin' it REAL curriculum to create a culturally grounded adaptation of the program. Participatory Action Research (PAR) methods that guided the process of making Keepin' it REAL culturally grounded for students in Phoenix, Arizona, were used applied to create an adaptation that would be culturally grounded for youth in Texas. PAR calls for collaborating with youth to identify issues that they face in their daily lives and establishing goals that target risk and protective factors related to those issues. PAR also calls for collaboration with community members and youth in developing, implementing,

and evaluating a program (Kelly, 2005; Kidd & Kral, 2005). This approach guided the process of creating and implementing an adapted version of the Keepin' it REAL curriculum and evaluating its effectiveness (Holleran & Hopson, 2006). Since Keepin' it REAL was developed and evaluated with youth between the ages of 10 and 17 in traditional school settings, the adaptation aimed to make the curriculum more appropriate for older youth between the ages of 14 and 19 who attend alternative schools. These types of adaptations are important because few prevention programs were created to address substance use among older youth and those in alternative schools (Sussman, Dent, & Stacy, 2002; Sussman, Sun, McCuller, & Dent, 2003).

Through focus groups and group activities, target youth at each setting described stories from their own experience. Just as in the original curriculum, these stories were used to create scenarios that were incorporated into skill building exercises. For example, the original curriculum included a list of scenarios about risky situations and students write how they would act in these situations. In creating the adapted materials, students read scenarios in the original curriculum and were asked whether a similar situation had ever happened to them. They would then be asked to describe the situation and the facilitator would ask the rest of the group if that is something they had ever experienced or witnessed. If so, the student's situation could be written into the adapted curriculum as a scenario. Participating students at each setting were asked to create video scripts based on their stories and recreate videos to accompany the curriculum.

Although new scenarios and videos accompany the adapted curriculum, it maintains the theory and research-based components that are consistent with evidence-based prevention programs and Communication Competence Theory. These include

components based on social influence models, such as modeling, role plays, and homework assignments. All of the informational and skill-building components remain in the adapted curriculum. The Principal Investigator worked in close consultation with curriculum developers to determine which parts of the curriculum were essential and which could be shortened or eliminated to make the program more feasible for implementation with alternative school students between the ages of 14 and 19. However, the scenarios and videos used to illustrate risky situations will be taken from the narratives of students at each setting. The adapted curriculum maintains the manualized, step-by-step implementation instructions. Throughout the study, focus groups and questionnaires are used to obtain student and staff feedback about the adaptation process and the evaluation of the resulting curriculum. These procedures are discussed in the following chapter in more detail, and adaptation procedures are provided in Appendices A and B.

Research Questions

The purpose of this study is to evaluate the effectiveness of the culturally grounded adaptation of Keepin' it REAL. The following research questions are the focus of this research:

1. Is an adapted version of Keepin' it REAL able to reduce intentions to accept offers of substances among participating alternative school students?
2. Is an adapted version of Keepin' it REAL able to reduce substance use among participating alternative school students?

CHAPTER III: RESEARCH DESIGN AND METHODOLOGY

Purpose of the Study

The purpose of this study is to evaluate whether site specific adaptations of Keepin' it REAL are effective at reducing risk for drug use and its risk factors and increasing resistance skills. The proposed study is part of a larger study examining the effectiveness of the adapted Keepin' it REAL curriculum in a variety of settings that serve high risk adolescents, such as homeless youth shelters, and community service organizations serving low income youth.

Hypotheses

This study investigates whether adapted versions of the Keepin' it REAL curriculum are effective with alternative high school youth. The hypotheses examined in this study are:

1. Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of alcohol.
2. Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of marijuana.
3. Participation in adapted versions of Keepin' it REAL will result in reduced alcohol use.
4. Participation in adapted versions of Keepin' it REAL will result in reduced marijuana use.

Setting

The study took place at four alternative high schools: School of Choice 1, School of Choice 2, Disciplinary School 1, and Disciplinary School 2. The identities of the

schools are concealed to preserve confidentiality. This study employed purposive sampling in selecting the schools for participation. At each of the selected schools, the principal indicated a need for substance abuse prevention, an interest in the study activities, and belief in the feasibility of carrying out the study in the school. In the alternative schools of choice students may apply for enrollment. In the disciplinary alternative school settings, students are mandated to complete a particular length of stay due to referrals from their home school for disciplinary problems.

School of Choice 1

School of Choice 1 is an alternative high school of choice serving students in the Austin Independent School District. Students must have completed at least ten credit hours at another high school before enrolling at School of Choice 1. The school describes its mission as fostering a community of empowered learners in an atmosphere of mutual respect. Students' educational plans are individualized and self-paced (School of Choice 1 website, n. d.).

School of Choice 1 had 411 students enrolled in the 2003/2004 academic year. Of these students, 18 percent were African American, 28 percent were Hispanic, and 42 percent were White. Economically disadvantaged students, defined as students who meet household income requirements for the free lunch program, accounted for 38 percent of the student body (Texas Education Agency [TEA], 2005).

School of Choice 2

School of Choice 2 was created to provide a learning environment for students at risk of dropping out of high school or those who have not succeeded at a traditional high school. Students are allowed to complete courses at their own pace with the goal of

earning a high school diploma (School of Choice 2 website, n. d.). School of Choice 2 had 157 students enrolled for the 2003/2004 academic year. Of these students, 13 percent were African American, 69 percent were Hispanic, and 15 percent were White. The school has a large number of economically disadvantaged students, with 66 percent qualifying for the free lunch program (TEA, 2005).

Disciplinary School 1

Students are referred to Disciplinary School 1 from the district's middle and high schools for serious offences, such as substance use or possession or violence. A typical stay at Disciplinary School 1 lasts for 30 to 45 days. The school states that its mission is to provide a quality education in a safe environment for the length of a student's stay and to encourage self-motivated learning. During their stay, students can be searched daily for items that are not permitted on campus, such as weapons, drugs, or large amounts of money (Disciplinary School 1 website, n. d.). Disciplinary School 1 enrolled 72 students during the 2003/2004 academic year. Of these students, 18 percent were African American, 42 percent were Hispanic, and 33 percent were White. Economically disadvantaged students accounted for 15 percent of the student body (TEA, 2005).

Disciplinary School 2

Disciplinary School 2 has a similar structure to Disciplinary School 1. Students are referred from their home campuses for serious offences, such as substance use. Students may be enrolled at Disciplinary School 2 for up to six weeks. During that time, students are expected to follow behavioral rules and work in individual cubicles for most of the day to avoid altercations between students (Disciplinary School 2 School District website, n.d.; Pierce, 2006). Disciplinary School 2 had 157 students in attendance during

the 2003/2004 academic year. Of these students, 13 percent were African American, 69 percent were Hispanic, and 15 percent were White. Economically disadvantaged students accounted for 66 percent of the student body (TEA, 2005).

The participating schools represent different types of alternative schools identified by Raywid (2004) and described in the previous chapter. The Popular Innovations type employs techniques often identified as effective educational practices, and students may typically choose to enroll. Last Chance alternative school programs are used as disciplinary programs and focus on behavior modification more than alternative educational approaches. Remedial Focus schools provide social, emotional, or educational rehabilitation to promote social and emotional growth (Raywid, 1994).

School of Choice 1 and School of Choice 2 may best be described as the first type, Popular Innovations. Students may choose to attend these schools because of the types of programs and course offerings or because they prefer a less traditional classroom setting. Students at School of Choice 1, for example, have a great deal of flexibility in their daily schedules. They can choose to attend classes only in the morning, only in the afternoon, or all day, depending on their needs. These programs also offer some services that may be more characteristics of the Remedial Focus schools because they offer a range of counseling services and groups to support students who face a range of challenges from teen pregnancy or parenthood to substance abuse. In this study, these programs will be referred to as alternative schools of choice, since this is the terminology used by school staff and the school district.

Disciplinary School 1 and Disciplinary School 2 are best described as Last Chance Programs according to Raywid's (1994) categories. Students are mandated to

attend these schools for a limited amount of time due to disciplinary problems in their home schools. As with School of Choice 1 and School of Choice 2, these schools do not fit neatly into the same category. Disciplinary School 1, for example, has introduced some non-traditional teaching practices to foster academic and social skills among students during their brief stay. Class sizes are small and teachers provide one-on-one instruction. Students also participate in social skills and problem solving groups that may be more consistent with Remedial Focus Schools. In this study, these schools will be referred to as disciplinary alternative schools.

Because each of these alternative school settings is unique, staff at each site were asked to complete an organizational assessment. Organizational characteristics, such as collaboration among staff and frequent positive student-teacher interactions, can influence the effectiveness of services offered in schools (Harris & Hopkins, 2000; Hofman et al., 2001; Keys et al., 2003) For this reason, it is important to assess organizational characteristics to inform the process of evaluating intervention effectiveness.

Participants

Participants were students attending one of the four participating alternative schools between the ages of 14-19. Due to the varied demographics at the schools, the sample was diverse in terms of ethnic and socioeconomic status. Classrooms often consisted of students from multiple grade levels. Students in any given class or group typically represented a range of ages between 14 and 19 years old. Students also had a range of substance use experience, including those who have never or rarely used substances and those who used substances on a daily basis.

Recruitment and Retention

Purposive sampling was employed to select groups of students for participation in the study. The researcher, principal, and school staff collaborated to select two student groups from each school for participation. The primary criteria used to select student groups included a need for substance abuse prevention as determined by the principal and school staff, the availability of a facilitator to voluntarily provide the curriculum to the group, and likelihood that the students in the group would be able to attend sessions for six weeks.

Each school required a slightly different process for selecting groups. Researchers employed Participatory Action Research methods in collaborating with students and staff. These methods included collaborating to determine how groups would be selected for the study. Although this resulted in different processes at each school, it allowed the school to participate in deciding which groups would be most appropriate for participation. This decision was based on minimizing disruptions to the school schedule and selecting two groups that were likely to be similar with respect to demographics and substance use.

One of the alternative schools of choice allowed students to complete course credits at their own pace. Students would change classrooms as soon as they finished the credit for that class and would sometimes spend only a few weeks in any given classroom. For this reason, it was not feasible to select classrooms for participation in the curriculum, and the principal allowed a pre-existing group to participate. This group consisted of students who self-identified as wanting to participate in a group focused on substance use. Since there was no other similar group at the school, the comparison group consisted of a classroom of students who volunteered to participate. Even though these

students changed classrooms during the course of the study, the researcher was able to administer the questionnaires at the appropriate times by locating the students in their new classrooms if they had moved.

In the second alternative school of choice, the principal would only permit one classroom of students to participate in the study but allowed the researchers to recruit comparison group participants from students during the lunch break. The researchers were careful to select students for the comparison group who were not participating in the experimental group also.

In one of the disciplinary schools, the principal allowed two similar classrooms to participate in the study and the classroom whose teacher volunteered to provide the curriculum was selected as the experimental group.

In the second disciplinary school, two similar groups were selected to receive the intervention and were arbitrarily assigned to conditions. In this case, the participating students were in a pre-existing group that aimed to teach social skills, and the principal felt that Keepin' it REAL was a good fit for the priorities of this group.

In order to recruit students within the selected groups, teachers and counselors provided a brief description of the study to students and distributed consent forms. A copy of the consent form is provided in Appendix C. Students were instructed that they needed to return the consent form with their own and their parents' signatures in order to participate. The consent forms provided a detailed description of study activities, and parents were encouraged to call the school counselor or a member of the research team if they wanted additional information about the program. Consent forms were available in

Spanish for participants who indicated that they or their parents are more comfortable reading the information in Spanish. The consent form included:

- A project description
- A description of the purpose of study activities
- Information about protection of confidentiality
- The risks and benefits of participation
- Statement affirming that their decision whether or not to allow their child to participate will not affect their relationship with others involved, and
- Contact information for the researcher and a school counselor or other staff member.

In order to encourage students to participate in study activities and remain in the study to complete follow-up questionnaires, they were provided with incentives for completing questionnaires. Participants received $10 for each time they completed questionnaires. They also received $5 for participating in a focus group. Participants who completed questionnaires at pretest, posttest, and follow up, and the final focus group received a total of $35 in incentives. At the disciplinary schools, the principals required that the students be paid with gift cards instead of cash.

Because the schools indicated that it was only feasible to provide the curriculum to entire groups of students, the curriculum was provided to all students in participating groups, but only those who had written consent participated in the focus groups and questionnaires. These activities were conducted at a time that did not conflict with regular classroom activities.

Research Design

The adapted Keepin' it REAL curriculum was evaluated using a mixed methods design that included a quasi-experimental pretest posttest design with a six week follow up and qualitative procedures guided by grounded theory. In order to remain consistent with the collaborative approach employed to create the original Keepin' it REAL curriculum and create the adapted versions, Participatory Action Research (PAR) methods were used in planning for implementation and evaluation. PAR methods were employed for the following activities:

- Selection of groups to participate in the study at each school
- Determining the duration of the curriculum
- Scheduling a training on the curriculum
- Determining when and where questionnaires would be distributed
- Conducting weekly consultations with facilitators at each school
- Obtaining student feedback on the curriculum through focus groups

Two groups were identified in collaboration with the principal and staff at each school and were assigned to either the experimental or comparison condition. Students in the comparison condition received the services the school would typically offer. The researchers offered to train additional school staff after completion of the curriculum so that some comparison group participants could have the opportunity to receive the curriculum.

Procedures

All procedures were approved by the Institutional Review Board at the University of Texas at Austin prior to beginning study activities. After obtaining written consent,

participants in both conditions were administered a questionnaire. The questionnaire included items about demographic characteristics, current substance use, attitudes about substance use, and use of resistance skills. See Appendix D for a copy of the questionnaire. After completing the questionnaire, students in the experimental group were asked to attend six Keepin' it REAL sessions. The time for offering these sessions was determined by the principal and staff and each setting in order to minimize disruptions of the staff's and students' daily schedules.

Students were assigned code numbers that were written on questionnaires instead of names or other easily identifiable information. The first part of the code number indicated the site, the second indicated the condition, and the third represented the individual participant. In order to administer posttest and follow up questionnaires to participants, a list of code numbers and corresponding participant names and their contact information was stored in a locked file cabinet.

After students completed the curriculum, students in both conditions were given the questionnaire again. At this time, students who received the curriculum were asked to participate in a 45 to 60 minute focus group to discuss their perceptions about the program. All participating students were asked to complete the questionnaire again at six weeks following completion of the curriculum. Because many students were no longer attending the alternative school, follow-up questionnaires were sent by mail. Questionnaires were pre-coded with the participant's code number and were mailed with a self-addressed stamped envelope for its return to the researcher. Students were asked to complete the questionnaire and return it to the researcher within three days of receiving

it. The researcher also offered to bring follow up questionnaires and incentives to students' schools or homes if they preferred.

Facilitator Training

Curriculum facilitators were teachers or counselors at each school. The Keepin' it REAL curriculum includes an easy to follow teacher's manual and was designed to require little or no formal training. However, the research team conducted brief trainings with each facilitator prior to implementation. The trainings were completed in 60 to 90 minutes and facilitators were given the teacher's manual, the student workbooks, and a copy of the videos. The researcher and principal investigator conducted the trainings by showing the curriculum videos and discussing the curriculum session-by-session with the facilitators. During the training, the facilitators were encouraged to ask questions and were given contact information for the researcher and principal investigator. Facilitators were compensated $20 an hour for implementing the curriculum.

Potential Threats to Internal Validity

Non-random sampling and assignment to groups

Although a true experimental design in which students are selected randomly would control for more threats to internal validity, this was not feasible in each of the participating schools. The researchers and principals at each school emphasized the importance of allowing teachers and counselors to volunteer for participation rather than having the principal direct certain teachers to participate. In addition to the lack of random selection of participants, groups were not randomly assigned to treatment conditions. This increases the likelihood that there may be important differences between groups that could affect the results of the analysis.

Diffusion of Treatment Effects

Locating both conditions in the same school presents potential threats to internal validity due to the possibility of diffusion of treatment effects. Diffusion of treatment effects occurs when participants assigned to different conditions interact with each other in ways that expose the comparison group to effects of the treatment (Rubin & Babbie, 2005). This could occur if students in the intervention group discussed material provided in the curriculum with comparison group participants. Despite this threat to internal validity, both conditions were located within each school to maximize the possibility of achieving comparable groups with respect to demographic information and substance use.

Attrition

Attrition presents another potential problem with respect to internal validity. Previous research indicate greater problems with attrition in research with alternative school students compared with traditional school students (Rohrbach, Sussman, Dent, & Pun, 2005). Rohrbach and colleagues reported a retention rate of 54% in their study examining substance use among alternative school students (Rohrbach et al., 2005). Attrition can be a problem with alternative school students because they may only be attending the school for a short period of time before returning to a traditional high school. In addition, the schools required that the curriculum be delayed until the completion of standardized state mandated testing so that the students would not be distracted from preparing for these tests. This meant starting the curriculum during the middle of the spring semester, allowing only time enough for pretest and posttest measures. Follow-up measures had to be completed by mail for all students except those

attending one alternative school in which students were enrolled year-round. Mailing questionnaires is likely to increase the attrition rate, because a good response rate for completing and returning questionnaires by mail is 50% (Rubin & Babbie, 2005).

Small Sample Size

Obtaining a large enough sample is difficult in an alternative school setting. Although a small sample does not necessarily compromise internal validity, it raises questions about generalizability of the findings and compromises the power of statistical analyses to the extent that they may not be able to detect differences between groups. Difficulties in obtaining a large sample sometimes result from students' failing to return consent forms. Only students who provided parental consent could complete the measures and focus groups. Obtaining signed consent can be difficult because students may forget to take forms home to their parents or may have a tenuous relationship with parents. Parents may also be reluctant to allow their child to participate in a substance abuse prevention program.

The researcher was also aware that substance abuse prevention is not the primary mission of alternative schools. Principals are not likely to allow students to devote time to a prevention program at the expense of important academic subjects. The researcher expected that this could limit the availability of student groups that could participate in the curriculum.

Fidelity

Intervention fidelity also has implications for internal validity. As discussed in chapter two, research suggests that interventions implemented in community-based settings are rarely implemented as intended by the intervention developers (Botvin, 2004;

Castro, Barrera, & Martinez, 2004). When curricula are not implemented with fidelity, the curriculum may no longer demonstrate the effective outcomes that it demonstrated in clinical trials (Blakely et al., 1987; Botvin et al., 1995; Elliott & Mihalic, 2004). Even though this curriculum is an adapted version of the original curriculum, the researcher worked with curriculum developers to understand the core components that must remain in the curriculum in order for it to remain effective. The researcher anticipated that facilitators may have difficulty following the curriculum closely enough to maintain effectiveness due to time constraints or personal preferences in service delivery. For example, one facilitator may not like to use role plays in a curriculum, but this is an important technique for the skill-building components of the curriculum.

Actions Taken to Reduce Threats to Internal Validity

Many potential threats to internal validity were anticipated, and the researcher took precautions to minimize the impact of these threats.

Non-random Sampling and Assignment to Groups

Because it was not possible to randomly assign students to treatment groups, the researcher requested that the participating groups be as similar as possible with respect to student age, other demographic characteristics, and substance use. Group characteristics were analyzed statistically in order to determine whether groups were similar in terms of age, ethnicity, gender, prior treatment for substance abuse, current substance use, and intentions to accept offers of substances. These findings will be discussed in the next chapter.

Diffusion of Treatment Effects

In order to prevent diffusion of treatment effects, students in the experimental group were asked to refrain from discussing group activities until the study had been completed. Focus groups with students participating in the curriculum also were assessed for information pertaining to threats to internal validity, such as diffusion of treatment effects.

Attrition

The researcher used several procedures for minimizing attrition. Only students who would be enrolled for a long enough period to complete the curriculum and the pretest and posttest were allowed to participate. Rubin and Babbie (2005) propose the following strategies for minimizing attrition: reimbursement for participation, avoiding frustrating research procedures, and utilizing tracking methods. The researcher included all of the strategies in order to prevent attrition. Students were given ten dollars or a ten-dollar gift card, depending on the preference of the principal, for completing each questionnaire. Students were told that they had to complete the entire curriculum in order to complete posttest and follow-up questionnaires and, therefore, receive their incentives. The researcher also took care to use simple measurement procedures by asking students to complete only one questionnaire. The measure was formatted so that questions and response categories would be easy to read (see Appendix D). Tracking methods included obtaining students' addresses and phone numbers and verifying this information with school records. This was intended to maximize the response rate for mailed questionnaires.

In order to increase the response rate to mailed questionnaires, the researcher included an addressed, stamped envelope along with a cover letter that provided clear instructions for returning the questionnaire and a reminder that the student would be mailed their incentive money following receipt of their questionnaire. Reminders and follow-up questionnaires were sent to students who did not return questionnaires by mail in order to enhance the likelihood that follow-up questionnaires would be returned. These techniques are recommended for increasing response rates to mailed surveys (Rubin & Babbie, 2005).

Sample Size

Steps were also taken to maximize sample size. The decision to include four schools in the study was, in part, due to anticipated difficulties in obtaining a large sample from any one school. In addition, the researcher asked for assistance from school staff in talking with students about the curriculum and reminding them to return consent forms. The incentives were also expected to motivate students to return consent forms.

Fidelity Assessment

In order to encourage facilitators to implement the curriculum as intended, the researcher asked their permission to observe some of the sessions. The facilitators found this to be acceptable. The researcher made several unscheduled and scheduled visits to the groups implementing the curriculum to observe implementation and address any questions from facilitators. The researcher would observe approximately 15 minutes of the curriculum for each visit. The visits were short in order to prevent students from feeling any discomfort in discussing substance use issues in the presence of an outsider. The researcher would ask the facilitator which session the group was completing in order

to assess how completely the facilitator was conducting the session. The researcher also conducted interviews with facilitators at the end of the curriculum to discuss implementation and whether they had chose to leave out any sections or add any additional information. One of the disciplinary alternative schools did not participate in the final interview because the facilitators indicated that they did not have time. However, they provided written feedback by email.

Results of the Fidelity Assessment. One of the disciplinary schools indicated that they did not use any of the role plays or games included in the curriculum because students were not permitted to interact with each other. This rule is intended to prevent confrontation and aggression between students. At this setting, the facilitators also implemented the curriculum in brief periods of time throughout the week rather than providing one 60 to 90 minute session. This may have compromised the effectiveness of the curriculum because it was designed to be delivered in longer sessions. Leaving out the role plays and interactive games presents a threat to internal validity because much of the skill building component of the curriculum relies on these activities.

In the second disciplinary alternative school, site visits and a final interview suggest that the facilitator followed the curriculum closely and included all components. In this school the curriculum was primarily delivered in longer sessions approximately 45 – 60 minutes in length. Any session material that was not covered in a session was completed the following day.

In the first alternative school of choice, the facilitator reported making a few changes to the curriculum. Because the students were not relating to the scenarios in the students workbook, the facilitator would ask the students to discuss similar scenarios

from their own experience. This should not have compromised fidelity because the scenarios were intended to reflect the students' experiences. The facilitator did not use the role play exercise in the session that discussed the Leave strategy. This poses a potential fidelity problem since the role plays are used for the skill building components of the curriculum.

In the second alternative school, the facilitator followed the curriculum closely. As in the other alternative school, the facilitator found that students had difficulty relating to some of the scenarios in the workbook. In these cases, she would invent a scenario of her own that she felt would engage the students. This would present a potential fidelity problem if her scenarios did not reflect the students' experiences. In this school, the students expressed that they did not like using the workbook and became less engaged when asked to read material and complete exercises in the book. For this reason, the facilitators would often read the workbook materials aloud and ask students to discuss them rather than write their answers.

Although the schools followed slightly different implementation schedules, the curriculum was implemented over the course of approximately six weeks. The disciplinary school that implemented the curriculum for brief periods throughout the week fell behind and completed the curriculum in seven to eight weeks. This resulted in greater attrition from this school because many students returned to their home schools before the curriculum was completed.

Timeline of Study Activities

The curriculum was implemented at each school beginning midway through the Spring semester following standardized testing periods. Table 3.1 provides a timeline of study activities.

Table 3.1

Timeline of Study Activities

Week 1	Pretest Questionnaire and Session 1
Week 2	Session 2
Week 3	Session 3
Week 4	Session 4
Week 5	Session 5
Week 6	Session 6, Post test Questionnaire and Focus Group
Week 12	Mail six-week follow-up questionnaires

Explication of Variables

Independent Variable: Participation in Keepin' it REAL

The independent variable in this study is whether students participated in the adapted version of Keepin' it REAL or the comparison condition. The curriculum consists of a teacher's manual, a student workbook, and five videos: one introductory video and one video to illustrate each of the four resistance strategies: Refuse, Explain, Avoid, and Leave. The teacher's manual provided step-by-step instructions for each

session of the curriculum along with handouts summarizing information provided by the facilitator and class activities. The student workbook provided scenarios, role, plays, and exercises that accompany each session of the curriculum. The teacher's manual was adapted from the original version to collapse the curriculum into six sessions since alternative school students are often enrolled six to eight weeks and schools indicated that ten sessions were not feasible within their settings. There were also some curriculum activities that seemed inappropriate for older students. All modifications to the teacher's manual were done in consultation with curriculum developers to ensure that the shortened curriculum maintained core curriculum components necessary for maintaining the integrity of the evidence based original curriculum. The videos and sections of the student workbook were adapted by students at each site. For adaptation procedures, see Appendices A and B.

Each Keepin' it REAL session provides information and an opportunity for students to discuss new terms and information. Skill building components and homework assignments are also included in each session. The sessions that discuss each of the four resistance strategies are accompanied by a student created video. The following descriptions are based on information provided in the Keepin' it REAL teacher's manual (Marsiglia & Hecht, 2005). Figure 3.1 provides an overview of Keepin' it REAL sessions.

Figure 3.1

Overview of Keepin' it REAL Sessions

Keepin' it REAL Session Overview

Session 1 – Introduction, Options, Choices and Risks, Communication and Conflict:

Students assess how they would respond in potentially risky social situations and identify the resistance strategies they might use; Students discuss important considerations in making decisions; Students also define risks and discuss potential consequences of risky behavior. Students learn consequences for different ways of handling conflict and communications skills for expressing themselves assertively while remaining respectful of others.

Session 2- Refuse:

Students learn communication skills for saying no in clear but respectful ways; Students discuss and learn peer norms that value saying no.

Session 3- Explain:

Students learn communication skills for explaining reasons for avoiding risky situations or behaviors.

Session 4 - Avoid:

Students learn the A-B-C-D problem solving methods for avoiding risky situations and learn peer norms that value avoiding risk.

Session 5 - Leave:

Students apply strategies learned in previous session to avoid engaging in risk behaviors when they find themselves in situations in which they are pressured to do so. Students also learn peer norms that value using this and other resistance strategies.

Session 6: Personal Health Views and Beliefs, Feelings, and Support Networks: Students discuss strategies that help them behave in ways that are consistent with their personal health beliefs. Students also develop values and learn norms that encouraging behaving in accordance with personal health beliefs. Students also identify those who can support them in making health decisions and can help them with health-related issues.

Session 1: Introduction, Options, Choices and Risks, Communication and Conflict

Session 1 of Keepin' it REAL provides an introduction to the curriculum and student view an introductory video that provides a curriculum overview and describes student involvement in creating the curriculum and the videos. The facilitator provides an overview of each of the four resistance strategies: Refuse, Explain, Avoid, and Leave. Students are asked to identify personal goals for the future and to discuss important factors to consider when making choices. Students are paired to discuss a situation in which they have recently had to make a choice or will need to make a choice in the near future. They discuss what they would say in the situation and why, along with possible consequences for themselves and others resulting from their choice.

The facilitator engages the students in a discussion about risk and relates this to the previous discussion about consequences (i.e. risky behavior is related to negative consequences). Students are asked to provide examples of situations that involve risk and to discuss the benefits of being able to identify risks. Students discuss situations in which risks are obvious and those in which they are not so obvious. Students engage in a game that illustrates the concept of risks using a gambling metaphor. At the end of the game,

students discuss the risks they took, how it felt to take the risk, and the personal and group consequences of taking the risk.

The facilitator asks students to discuss an experience in which they expressed an opinion that was not popular and how they felt about this experience. Facilitators explain the importance of being able to respectfully express personal values, even when they are unpopular. Students are asked to discuss why it might be important to learn skills in expressing personal views regardless of popular opinion.

Students participate in an exercise in which they read scenarios from the student workbook that describe a conflict and efforts to resolve it. They are asked to rank order each scenario according to its effectiveness in dealing with the conflict. Students discuss their responses. Facilitators provide students with information about passive, aggressive, and assertive behaviors, and students are asked to describe which type of behaviors are portrayed in the conflict scenarios. In order to practice expressing personal views respectfully, students engage in an exercise in which they use I-statements to express unpopular opinions. They are provided with the following pattern for using I-statements: I feel _____ when _____, because _____" or "I think _____, because _____". As a homework assignment, students are asked to think about a song that illustrates conflict of some kind. They complete a worksheet in which they describe the conflict, the response to the conflict, and ways to acknowledge each others views in the situation. An additional homework assignment asks students to review concepts they discussed in the session, including resistance strategies, choices, and consequences of choices. They are also asked to complete the assignment "Risks in Everyday Life", which directs students to think of their everyday activities and possible risks involved.

Session 2: Refuse

The group begins by reviewing the homework from Session 1. The facilitator then engages the students in a discussion about the importance of being liked by friends and the importance of acting in accordance with personal values. Students are asked to provide examples of situations in which friends asked them to do things they did not want to do. Students are taught the following plan for refusing pressure from friends:

1. Acknowledge the request
2. State their decision or preference clearly and respectfully
3. Provide an explanation for the decision if they prefer

The facilitator provides information about assertiveness techniques and students practice saying no using assertiveness techniques in pairs.

Students then watch the video illustrating the Refuse strategy. They are asked to notice the characters' use of verbal and nonverbal refusal skills and ways in which the characters respectfully say no. After watching the video, students discuss the use of assertiveness techniques, whether the character clearly stated a preference respectfully, and whether the character was assertive, passive, or aggressive in saying no. As a homework activity, students are asked to list situations in which they witnessed a person refusing something and describe how they said no.

Session 3: Explain

The group reviews homework from Session 2. The facilitator asks students to discuss the advantages of offering an explanation for refusing something and provides them with the following plan for using the explain strategy:

1. State clearly what you do not want to do.

2. State how doing the behavior in question would make you feel.

3. State what you would like to do or plan to do.

Students watch the video illustrating the Explain strategy. After viewing the video, students discuss whether the character(s) used assertive, passive, or aggressive explanations and whether the explanations made sense. They also discuss whether the characters used the steps for using the explain strategy. In order to practice using the strategy themselves, students form pairs and discuss things, such as food and activities, that they do not like and why. For homework, students are asked to describe a situation that had negative consequences that they felt they did not deserve. They describe the situation and explanations for their actions. Then, they evaluate their explanation and think about ways they could have improved it.

Session 4: Avoid

Students review the homework assignment from the previous session. Facilitators begin by asking students to define the term "Avoid". They explain that the Avoid strategy refers to behaviors taken to physically stay away from an undesirable situation. Students watch the video illustrating the avoid strategy. After viewing the video, students are asked to discuss how the character(s) avoided a situation and whether the strategies were effective. The group is also asked to consider whether the decisions made in the video would help the character in the future.

Facilitators explain the A-B-C-D problem solving method that can be used to avoid risky situations. The A-B-C-D method steps are:

A = Ask why it could be important to avoid a situation;

B = Brainstorm about ways to avoid the situation;

C = Choose the best solution for avoiding the situation, and;

D = Do it, or avoid the situation using the chosen solution.

In order to practice the A-B-C-D method, students form groups of five members and read Avoid Scenarios in the student workbook. The group thinks of three possible ways to avoid each situation and decides on the best solution. For homework, students are asked to think of times when they avoided a situation. They explain the situation, the reasons for avoiding it, and how they avoided it.

Session 5: Leave

The group reviews homework from Session 4. Facilitators then ask students to review the Refuse, Explain, and Avoid strategies. The leave strategy is defined as leaving an undesirable situation without giving an explanation. Facilitators distinguish the Avoid and Leave strategies by explaining that Avoid involves staying away from a risky situation, whereas Leave involves getting away from a harmful situation in which you find yourself. Students view the video illustrating the Leave strategy. Afterwards, students are asked to complete a video evaluation in which they identify all strategies they saw used in the video and whether they were effective. In order to practice the leave strategy, students engage in a role playing activity. Students form groups of four or five members and each group is given a scenario. Groups are instructed to create a role play from the scenario and act it out. The facilitator interrupts the role play when a drug offer is made and asks the students to discuss how the person being offered the drug may feel and whether they are communicating clearly that they want to leave the situation. Students are given a homework assignment in which they identify which strategies they would use with different people.

Session 6: Personal Health Views and Beliefs, Feelings, and Support Networks

The group reviews homework from the previous session. The facilitator asks students to complete a worksheet that illustrates the difference between norms and values. Students complete an activity in which they identify things they value in themselves and discuss them with a partner. Then, they complete sentences in ways that reflect personal values. For example, one sentence states, "I have a reputation for being a good student, and my teacher likes me a lot. If someone asked to copy my test answers, I would …".

After discussing norms and personal values, students engage in a discussion about feelings. Four or five students are given a piece of paper with a feeling written on it. They act out the feeling nonverbally and the group is asked to identify the feeling. This exercise is designed to encourage discussion about how people may express emotions in different ways. Students participate in a role play activity in which groups develop role plays from scenarios and act them out for the class. The group discusses how characters expressed their feelings and whether they did so effectively.

The remainder of the session is devoted to discussion about support networks. Students create an ecomap illustrating people who provide them with support and answer questions about which people on their map that they would turn to for help in different situations and why. The group then discusses direct and indirect ways of asking for help.

Changes Made to the Adapted Version of Keepin' it REAL

Other than shortening the curriculum from ten sessions to six, the adapted version of the curriculum maintains the same structure as the original version. The differences between the curricula consist of adapted workbook scenarios on which skill building

activities are based and the recreated videos that accompany the sessions on each resistance strategy. A few exercised were eliminated because curriculum developers said they would be less appropriate for students between the ages of 14 and 19. In creating the adaptation of Keepin' it REAL, students at each school worked in groups to create new scenarios and videos to accompany the curriculum. Facilitators for the adaptation were given instructions for guiding students in the process of creating the new material. Students creating new scenarios were instructed to do the following:

- Read scenarios from the original curriculum
- Brainstorm about similar situations that have occurred in their lives
- Write a new scenario that represents a situation that most group members have either directly experienced or witnessed

Students creating new videos for the project were instructed to do the following:

- Listen to an overview of the resistance strategy provided by the facilitator
- Brainstorm about situations most of the group members have either experienced or witnessed
- Create a screenplay
- Perform the scene
- Video the scene

Adaptations to the curriculum were structured so that the videos and scenarios cover the same topics as the original curriculum. For example, students in both the adapted and original versions of the curriculum practice using the four resistance strategies in role play exercises. However, the scenario described in the role play for the adapted version was created by a group of students at each setting. One of the role plays

in the original curriculum describes an offer of cigarettes. For the adapted curriculum, students in each setting may prefer to write a scenario involving a substance that they perceive as more risky or commonly used among their peers. Adaptation instructions for the workbook and video are provided in Appendices A and B. Schools were offered a video consultant to assist with filming the videos. Three of the schools used the consultant, and the fourth school had its own video and media lab, allowing students to film the videos themselves. Materials for the adapted curriculum were professionally printed so that they would resemble the materials for the original version. Figure 3.2 provides a description of differences between the original and adapted curricula by session.

Figure 3.2

Changes Made to the Adapted Version of the Curriculum

Session 1: Four scenarios used to encourage students to think about their responses to various peer pressure situations were rewritten by students at each site. The example used to illustrate an exercise in which student consider risks that accompany daily activities was rewritten. Students at each site also rewrote five scenarios that describe situations in which there is a conflict and an attempt to resolve it.
Session 2: The Refuse video that accompanies this session was recreated by students at each setting to reflect their experiences. Students rewrote five scenarios used for a group activity in which students discuss three ways to avoid the described situation.
Session 3: The Explain video that accompanies this session was recreated by students at each setting to reflect their experiences.

Session 4: The Avoid video that accompanies this session was recreated by students at each setting to reflect their experiences.

Session 5: The Leave video that accompanies this session was recreated by students at each setting to reflect their experiences. Students created two new roleplay scenarios that are used to practice each resistance strategy when offered a substance.

Session 6: Students rewrote three scenarios used to encourage students to think about their personal values and behaviors in several situation that involve risk-taking, such as stealing and substance use.

Dependent Variables

The dependent variables included in the analysis are

- Marijuana Use
- Alcohol Use
- Intentions to Accept Marijuana
- Intentions to Accept Alcohol

The variables of Alcohol Use and Marijuana Use were selected for this study because the curriculum aims to decrease substance use among students who are already using substances, and past research has indicated that it effectively decreases use among students between the ages of 12 and 17 (Hecht et al., 2003; Kulis et al., 2005). Although the questionnaire asks students to also report their use of inhalants, cocaine, heroine, ecstasy, pharmaceuticals, and hallucinogens, these substances were not included in the analysis because few students reported using these substances, and the small sample necessitated including only a few variables in the analysis in order to maintain some

power to detect differences in the analysis. In addition, the focus group data reflected that the students felt the curriculum focused more on alcohol and marijuana use rather than the use of other substances.

The variables measuring Intentions to Accept Alcohol and Intentions to Accept Marijuana were included in the analysis because they measure students' current expectations about their own behavior rather than reports of use over the past 30 days. Since Keepin' it REAL is a prevention program, it aims to delay use among those who are not using substances in addition to decreasing use. This variable provides a measure that may detect changes in students who are not using or who are using very little. This variable is also important because changes in alcohol and marijuana use may require participation in the entire curriculum. Therefore, changes in use over the past 30 days would not be evident at posttest whereas changes in intentions to accept offers of substance may be evident.

Control Variables

The following control variables were considered for inclusion in the analysis:

- Age
- Gender
- Ethnicity
- School
- Participation in Adaptation Procedures (Phase I)
- Prior Treatment for Substance Use

Due to limited sample size and statistical power, only Age was included in the analysis as a control variable. This variable was selected due to a priori analyses

indicating a difference between groups on this variable. This will be discussed further in the next chapter.

Measures

The measures used for this study rely on self-reported data. Although this type of data has limitations and is vulnerable to bias, it is commonly used in studies examining substance abuse attitudes and outcomes. Many studies indicate that self-report measures provide a valid measure of substance use when comparing outcomes over time, especially when self-reports are limited to reporting use over the past 30 days (Ellickson & Bell, 1990; Johnston, 1989; O'Malley, Bachman, & Johnston, 1983; TCADA, 2000). Although there is limited existing reliability and validity information for some of the scales in the questionnaire, analyses were conducted on test-retest reliability and internal consistency reliabilities and factorial validity when applicable for this study.

Because this research is part of a larger study that examines other variables, the questionnaire includes many items that were not analyzed for this study. The specific measures used here are presented below along with psychometric information for each of the dependent variable measures, and the entire measure is presented in Appendix D.

The measures used in this study were selected because this study is part of a larger study conducted by Lori Holleran which evaluates the adapted version of Keepin' it REAL in a variety of community-based and school settings and was funded through a K01 grant awarded from the National Institute on Drug Abuse (NIDA). The measures used in this study are used in the larger study and were approved for use by NIDA [1K01 DA017276-01]. The use of these measures was also important because they are consistent with measures used in the Drug Resistance Strategies (DRS) project that has

evaluated Keepin' it REAL using large school populations and the Texas School Survey of Substance Use, which has been used for almost a decade to measure trends in substance use among Texas students. Using measures that are consistent with DRS and the Texas School Survey measures provides the opportunity to compare sample characteristics and intervention outcomes across these studies.

Control variables

Demographic Variables

Age. One question asks students to circle the appropriate age from the following choices: 14, 15, 16, 17, 18, 19.

Gender. A single question asks students to identify themselves as a Boy or Girl.

Ethnicity. Ethnicity is measured with a single item that asks students to identify their ethnicity from the following categories: White/Caucasian; Black/African American, Hispanic/Latino/Mexican/Mexican-American; Asian; Pacific Islander; Native American/Indian/First Nation; and Other. For responses of Other, students are asked to indicate their ethnicity.

School. The school the students were attending while participating in the curriculum was included to determine whether school characteristics may be a factor to consider in determining intervention effectiveness. The student's school is identified by using the student's code number, which includes a code for the school setting in which they received the curriculum.

Participation in Adaptation of Curriculum. Students who participated in the adaptation of the curriculum were permitted to participate in the evaluation of the curriculum. However, since helping to create the curriculum may have an effect on the

outcomes of students who receive the curriculum, the following question was included in the questionnaire:

Did you help with the process of making the student workbook or videos for this project?

Response categories are Yes and No.

Treatment for Substance Use. In order to determine the number of students who have received treatment for substance use, the questionnaire includes the following question:

Have you ever received treatment for drug use or abuse?

Response categories are: Yes, I am currently receiving treatment; Yes, I have completed a treatment program, and; No.

Dependent Variables

Past Month Alcohol Use

Description. Past month alcohol use is measured with three items adapted from the Texas School Survey of Substance Use developed by the Texas Commission on Alcohol and Drug Abuse (TCADA, 2000). The questions about alcohol use and marijuana use are items used in the school survey, but the following modifications have been made: The original question asked how many times during the past 30 days the participant has used several substances and included four responses for level of use: Never heard of it/Never Used it, 1-2 times, 3-10 times, and 11 + times. The revised question used in this study includes an additional response category for use of alcohol and marijuana of 20 or more times. The revised response categories are: Never heard of it/Never Used it, 1-2 times, 3-10 times, and 11-19 times, and 20+ times. These were the same categories used in the pilot study evaluating youths' perceptions of the Keepin' it

REAL videos (Holleran et al., 2005) and were more appropriate for the participants in this study because some students indicated use of large amounts of alcohol and marijuana in focus groups and on the questionnaires. Items ask students to identify the number of times during the past 30 days they have used the following types of alcohol: beer, wine-coolers/wine, and liquor.

For the purposes of this analysis, the three alcohol use variables were combined into a single summed scale to avoid problems with inadequate power resulting from too many variables and problems with multicollinearity. The three alcohol use variables were highly correlated. Factor analysis was also conducted and confirmed that the three variables loaded on the same factor. Scores for each of the measures were added to result in a summed score for alcohol use.

Reliability. The same items used to measure past month alcohol use in this study were included in a substance use scale in the pilot study examining local youths' impressions of the Keepin' it REAL videos (Holleran et al., 2005). Reliability analyses from this data indicate that the questions in the current substance use scale provide reliable measures of self-reported substance use (Alpha = .7994).

Validity. The Texas School Survey of Substance Use was extensively tested for validity for use with students in grades seven through twelve. The survey was refined and tested through nine years of administrations with two million students. It has been administered throughout the state of Texas every two years since 1988. Validity analyses have not been conducted on the survey in recent years. However, the survey includes quality control measures to promote confidence in the validity of the results. After each administration, every survey item was analyzed to assess for problems with

misinterpreting questions, dishonest responses, and failure to follow instructions. The analysis revealed few students whose responses were affected by these problems. Most problems with internal consistency were a result of using different terminology for the same substance (i.e. tobacco products and cigarettes) and different interpretations of use occurring when one student interpreted use as regular use and another student would define use as one instance of trying a substance (TCADA, 2000).

Scoring. Response categories for the questions in this analysis are scored using the following values: Never heard of it = 1; Never used it = 2; 1-2 times = 3, 3-10 times = 4, 11-19 times = 5, 20 or more times = 6. These categories were recoded for the analysis as follows: Never heard of it/Never used it = 0; 1-2 times = 1, 3-10 times = 2, 11-19 times = 3, 20 or more times = 4. Scores of the three alcohol use items are summed to provide an overall score for current alcohol use. Higher scores indicate greater frequency of alcohol use.

Sensitivity to change. Because the scale asks students to report alcohol use during the last 30 days, the scale may not be sensitive enough to detect differences at posttest, but is sensitive enough to detect differences at follow-up. The duration of the intervention was six weeks, and, at posttest, the students were reporting their past month's use beginning at the time period at which they had only attended two sessions of the curriculum. Any curriculum effects may not have been apparent until the students had attended more sessions. Although there are potential problems with sensitivity, the question asks about use during the past 30 days to provide a more valid representation of current use. Reporting use during a shorter period of time may result in inaccurate representations of use if, for example, students went to a party the weekend before

completing the questionnaire and used more than they would in a typical week. Both the Drug Resistance Strategies (DRS) Project, and the Texas School Survey of Substance Use measure current substance use with self-reports of use during the past 30 days. Thus, using this measure provides for the possibility of comparing the use of the current study's population with the students surveyed for those studies.

Past Month Marijuana Use

Description. Past month marijuana use is measured with one item adapted from the Texas School Survey of Substance Use developed by the Texas Commission on Alcohol and Drug Abuse (TCADA, 2000). Items ask students to identify the number of times during the past 30 days they have used marijuana. The original question included four responses for level of use: Never heard of it/Never Used it, 1-2 times, 3-10 times, and 11 + times. The revised question used in this study includes an additional response category for use of alcohol and marijuana of 20 or more times. The revised response categories are: Never heard of it/Never Used it, 1-2 times, 3-10 times, and 11-19 times, and 20+ times. These were the same categories used in the pilot study examining youths' impressions of Keepin' it REAL videos (Holleran et al., 2005) and were more appropriate for the participants in this study because they indicated use of large amounts of marijuana in focus groups and on the questionnaires.

Reliability. The same items used to measure past month marijuana use in this study were used as part of a substance use scale in the pilot study examining local youths' impressions of the Keepin' it REAL videos (Holleran et al., 2005). Reliability analyses from this data indicate that the questions in the current substance use scale provide reliable measures of self-reported substance use (Alpha = .7994). Since this item was

used individually and not as part of a larger substance use scale in this study, the internal consistency analysis is not a useful measure of reliability. For this reason, this item was be evaluated for test-retest reliability for this study.

Validity. The Texas School Survey of Substance Use was extensively tested for validity for use with students in grades seven through twelve. The survey was refined and tested through nine years of administrations with two million students (TCADA, 2000). Procedures used for quality control are described above for the variable, Alcohol Use.

Scoring. Response categories for the questions in this analysis are scored using the following values: Never heard of it = 1; Never used it = 2; 1-2 times = 3, 3-10 times = 4, 11-19 times = 5, 20 or more times = 6. These categories were recoded for the analysis as follows: Never heard of it/Never used it = 0; 1-2 times = 1, 3-10 times = 2, 11-19 times = 3, 20 or more times = 4. Higher scores indicate greater frequency of marijuana use.

Sensitivity to change. As with the Alcohol Use measure, the Marijuana Use measure may not be sensitive enough to detect differences at posttest, but is sensitive enough to detect differences at follow-up. The duration of the intervention was six weeks, so, at posttest, the students were reporting their past month's use beginning at the time period at which they had only attended two sessions of the curriculum. Any curriculum effects may not have been apparent until the students had attended more sessions. Although there are potential problems with sensitivity, the question asks about use during the past 30 days to provide a more valid representation of current use than a question that asks about use during the past week, for example, because it would be more affected by anomalies in use, such as increased marijuana use at a party or during spring break. Both the Drug Resistance Strategies (DRS) Project, and the Texas School Survey of Substance

Use measure current substance use with self-reports of use during the past 30 days. Thus, using this measure provides for the possibility of comparing the use of the current study's population with the students surveyed for those studies.

Intentions to Accept Alcohol

Description. The variable Intentions to Accept Alcohol is measured with two items adapted from the original Drug Resistance Strategies (DRS) Project and used in the pilot study examining students' perceptions of the Keepin' it REAL videos (Holleran et al., 2005). The original DRS questions asked students if they would accept an offer of beer, wine, or liquor. Response categories consisted of the following: Definitely Yes, Yes, No, and Definitely No. The items for this study were changed slightly and asked students to identify the extent to which they agree with the following statements: If someone offered, I would accept beer or wine, and; If someone offered, I would accept liquor. Response categories were represented as follows: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree. For the purposes of this analysis, the two alcohol acceptance variables were combined into a single summed scale to avoid problems with inadequate power and too many variables and problems with multicollinearity. The two alcohol acceptance variables were highly correlated. Factor analysis was also conducted and indicated that the variables loaded on the same factor. Scores for each of the measures were added to result in a summed score for Intentions to Accept Alcohol.

Reliability. The original items from the DRS survey were evaluated for reliability and demonstrated good internal consistency with an alpha of .82 (Hecht et al., 2003). The adapted items used to measure intentions to accept offers in this study were part of a scale

used in the pilot study examining local youths' impressions of the Keepin' it REAL videos (Holleran et al., 2005). Reliability analyses from this data indicate that the questions in the attitudes toward accepting offers demonstrate good internal consistency with an alpha of .9456.

Validity. Validity analyses have not been conducted on this scale as it is used in this study. However, factorial validity was examined for this study.

Scoring. Response categories for items in this scale are scored as follows: Strongly agree = 1, Agree = 2, Neither agree nor disagree = 3, Disagree = 4, and Strongly disagree = 5. Higher scores indicate lower intentions to accept offers of alcohol.

Intentions to Accept Marijuana

Description. The variable Intentions to Accept Marijuana is measured with one item adapted from the original Drug Resistance Strategies (DRS) Project and was used in the pilot study examining students' perceptions of the Keepin' it REAL videos (Holleran et al., 2005). The original DRS questions asked students if they would accept an offer of marijuana. Response categories consisted of the following: Definitely Yes, Yes, No, and Definitely No. The items for this study were changed slightly and asked students to identify the extent to which they agree with the following statement: If someone offered, I would accept marijuana. Response categories are represented as follows: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, and Strongly Disagree.

Reliability. The same item used to measure Intentions to Accept Marijuana in this study were part of a scale used to measure intentions to accept offers of drugs and alcohol in the pilot study examining local youths' impressions of the Keepin' it REAL videos (Holleran et al., 2005). Reliability analyses from this data indicate that the questions in

the attitudes toward accepting offers scale provide reliable measures of intentions to accept an offer of substances (Alpha = .9456). Since the current study only includes a single item to measure Intentions to Accept Marijuana, the internal consistency of the original scale, which measures intentions to accept a number of substances, does not provide useful reliability information for this item used as a separate item. For this reason, a test-retest reliability analysis was conducted on this measure for this study.

Validity. Validity analyses have not been conducted on this scale as it is used in this study.

Scoring. Response categories for items in this scale are scored as follows: Strongly agree = 1, Agree = 2, Neither agree nor disagree = 3, Disagree = 4, and Strongly disagree = 5. Higher scores indicate lower intentions to accept offers.

Student Focus Groups

Students who received the adapted curriculum were also asked to participate in a 45 to 60 minute focus group following participation in the curriculum to discuss their perceptions about the program. Student focus groups were conducted at posttest to provide information in the students' own words that can supplement quantitative findings. Focus groups were not conducted at Disciplinary School 2 because the participating students who remained at posttest were a small percentage of each classroom. The researcher was not given permission to remove the participating students from the classroom, and it was not feasible to conduct the focus group during class time, since so few of the students in the class were participants. The focus group protocol is provided in Appendix E and included questions on the following topics:

- Substance use by peers

- Approaches that would be useful in preventing abuse of substances
- Videos used in the curriculum
- Components of the curriculum that were useful
- Components of the curriculum that were not useful

The focus group discussions were audio recorded and transcribed verbatim. These transcriptions were supplemented by the researcher's notes, which were written during the focus groups.

Organizational Characteristics

Description. The School Success Profile – Learning Organization (SSP-LO) developed by Gary Bowen (www.schoolsuccessprofile.org) was used to measure organizational characteristics that facilitate student learning. This measure was included to determine whether participating alternative schools are significantly different in ways that could facilitate or hinder students' ability to benefit from participation in the Keepin' it REAL curriculum.

The SSP-LO assesses characteristics that define a school's culture. Because each school created adapted videos and workbook materials that reflected their experiences, the school culture may have an impact on the materials that students choose to produce. Schools in which staff collaborate and work as a team facilitate student learning more than a school in which there is little collaboration, for example (Bowen, Rose, & Ware, 2006; Lee, Dedrick, & Smith, 1991; Lee & Smith, 1993). Collaboration and teamwork for the purposes of creating a culture that fosters learning is defined not only by interactions among school staff but also interactions with students, their families, and community members (Bowen et al., 2006). In a school that values student contributions,

students may feel that they have more freedom to express their views and that the materials they produce will be respected. The products from this type of school may differ greatly from a school setting in which students are given few opportunities to express their opinions.

A learning organization is defined as a school or other community organization that employs information from staff and key stakeholders to plan, implement, and evaluate practices that help students achieve desired outcomes. Actions and sentiments help define whether a school is a learning organization. Actions are defined as behaviors and patterns of interaction. In assessing staff actions, the SSP-LO measures the following six dimensions: team orientation, innovation, involvement, information flow, tolerance for error, and results orientation. Sentiments are defined as attitudes and expressions of positive regard or emotions that occur in interactions among staff. Staff sentiment is measured through another six dimensions: common purpose, respect, cohesion, trust, mutual support, and optimism (Bowen et al., 2006). Three questions are used to measure each dimension. There are 36 items that measure the 12 dimensions described above. An additional six items measure perceptions of personal health, job satisfaction, self-efficacy for making a positive difference, potential school performance, and the likelihood of continued employment (Bowen et al., 2006). These items were used to assess construct validity. The items that correspond to each dimension are provided in Appendix F.

Reliability. The SSP-LO was evaluated for internal consistency reliability and construct validity using a sample of 766 employees in 11 different schools. Both subscales of actions and sentiments demonstrated strong internal consistency reliability with an alpha of .929 for actions and an alpha of .953 for sentiments (Bowen et al., 2006).

Validity. Factor analysis supported the existence of two factors that were defined as sentiments and actions. Construct validity was assessed by examining the strength of the correlations between the subscales for actions and sentiments and the items measuring perceptions of personal health, job satisfaction, self-efficacy for making a positive difference, potential school performance, and the likelihood of continued employment. The correlations were all positive, ranging from .082 to .508, and were statistically significant. These results provide support for the measure's construct validity (Bowen et al., 2006).

Scoring. Each item is scored using a Likert scale from one (Strongly Disagree) to six (Strongly Agree) (Bowen et al., 2006).

Analysis

Quantitative Analyses

The analysis included four ordinal dependent variables that were treated as metric variables (Intentions to Accept Alcohol, Intentions to Accept Marijuana, Past Month Alcohol Use, and Past Month Marijuana Use). The independent variable (Experimental vs. Comparison Condition) consisted of nominal data. The control variable, Age, was a metric variable. All quantitative analyses were conducted using SPSS software. Chi Square tests were used to examine whether there were significant differences between groups at pretest for the nominal variables of Gender, Ethnicity, School, Participation in the Adaptation Process, and Prior Treatment for Alcohol or Drug Use. Age differences were examined using independent t-tests. T-tests were also used to examine whether there were differences between groups at pretest on the dependent variables.

A repeated measures Multivariate Analysis of Variance (MANOVA) was used to determine the relationship between the dependent variables and the independent and control variables. A MANOVA was selected for the analysis to prevent inflation of a Type I error resulting from the many statistical tests needed for including four dependent variables. A repeated measures MANOVA also reduces the effect of within-groups error on the analysis by matching individual students' pretest, posttest, and follow up scores. Because classrooms are not randomly selected and students are not placed randomly into classrooms, it is possible that groups will differ with respect to gender, age, ethnicity, substance use, and other variables included in the analysis. The MANOVA statistically reduces the effect of error resulting from differences between treatment groups because it takes into account patterns of change over time (Hair, Anderson, Tathum, & Black, 1998). Age was included in the analysis as a control variable because of age differences between groups at pretest. Analyses of Variance (ANOVAs) were used to explore whether the schools differed on SSP-LO dimensions.

A Priori Power Analysis

In order to achieve adequate power in a MANOVA analysis, there must be at least as many cases in each cell as there are dependent variables in the analysis (Hair et al., 1998). Because this analysis includes a two-category independent variable and a six-category control variable, age, there are 12 cells. Each cell would need four cases, since there are four dependent variables, and the analysis would require a total sample of at least 48 participants. Because this is the minimum recommended sample size, optimal statistical power would require a larger sample (Hair et al., 1998). The researcher, therefore, attempted to recruit a sample of at least 30 students from each school to

achieve a sample size of 120 in order to maintain adequate sample size following attrition. The researcher anticipated an attrition rate of approximately 50% since follow-up questionnaires would be completed by mail. A response rate of 50% is generally considered good for mailed questionnaires (Rubin & Babbie, 2005).

Qualitative Analysis

The qualitative methodology for this study primarily employed methods from grounded theory, although the analytic process was emergent and did not strictly follow one particular approach. Data collection involved semi-structured focus groups with students who completed the curriculum and posttest measures. The focus group questions were open-ended and concerned topics related to the research questions and theoretical framework for this study. These topics included substance use, attitudes about substances, attitudes about the curriculum, and helpful prevention strategies for the participants. The focus groups were audiotaped and transcribed verbatim. In addition, the researcher took detailed notes during the focus groups. The focus group protocol is provided in Appendix E.

Reliability and Validity

Although reliability and validity are substantially different in qualitative and quantitative research, there are numerous techniques that can be applied in qualitative studies to increase confidence that different researchers would generate similar findings from the data (reliability) and that the analysis correctly represents the views of participants (validity) (Franklin & Ballan, 2001).

Reliability. Some techniques that are helpful in establishing reliability that were included in this study are:

- Examining participant responses across different forms of the same question
- Cross checking interpretations of the data
- Applying a Consistent Analytic Method (Franklin & Ballan, 2001)

The focus groups included different means of obtaining similar information. The protocol included questions that asked students to report positive and negative perceptions of the Keepin' it REAL curriculum and were also asked for their ideas about appropriate prevention strategies for their age group. These two categories of questions both generated information about techniques that are and are not helpful in prevention programs for this population.

Cross checking interpretations of the data can be accomplished by having multiple research team members confirm observations or interpretations of the qualitative data (Franklin & Ballan, 2001). In this study, cross checking was used by having two separate members of the research team separately code focus group statements. Interpretations and themes were also discussed during group meetings with two additional research team members.

Applying a consistent analytic method includes pre-determining an analytical approach that is guided by a theoretical framework (Franklin & Ballan, 2001). For this study, grounded theory methods were employed to analyze the data, beginning with open coding and working to achieve greater specificity until coding reached the point of saturation. Although the methods for this study do not employ all procedures associated with the grounded theory approach, the same procedure was used to code all of the focus group data. This method is described below following the discussion of validity.

Validity. The study included the following techniques that are helpful in establishing validity of the findings:

- Prolonged Engagement
- Purposive Sampling
- Triangulation
- Peer Debriefing
- Negative Case Analysis (Franklin & Ballan, 2001)

Prolonged engagement involves spending enough time in a setting to reduce distortions in the data that could be caused by the researcher's presence (Franklin & Ballan, 2001). This procedure was employed in each school to build rapport with school staff, students, and administrators. The researcher began visiting the schools during the adaptation phase of the larger study, which began in September, 2005, and made weekly visits to each school between pretest and posttest administrations, which occurred between March and June of 2006.

For this study, purposive sampling simply involved the inclusion of all students who had completed the curriculum and posttest measures in the focus groups. With the exception of a few students who were absent from school, all of the students who completed posttest measures also participated in the focus groups.

Triangulation is the process of using multiple data sources to verify findings (Creswell, 1998; Franklin & Ballan, 2001). By including both quantitative and qualitative methods to explore the curriculum's impact on substance use and youth attitudes, the researcher can explore the validity of both data sources. When quantitative data and qualitative data provide corroborating

evidence that confirms or fails to confirm a hypothesis, the researcher can have greater confidence in both forms of data (Franklin & Ballan, 2001).

Peer debriefing is the process of engaging a peer in questioning the researcher's interpretations (Creswell, 1998; Franklin & Ballan, 2001). The analysis of focus group data was conducted independently by two researchers. Following open coding the researchers met for debriefing sessions in which they discussed each other's interpretations of the data. Discrepancies in coding were discussed until the researchers reached a consensus. The coding and peer review process occurred three times as the researchers worked to achieve greater specificity in coding themes.

Negative Case Analysis involves examining data that disconfirms hypotheses or themes that the researcher has defined (Creswell, 1998; Franklin & Ballan, 2001). In an attempt to further establish the trustworthiness of the data, the researcher looked for anomalies, or instances in which the statements diverged from the main themes.

Analytic Method

The purpose of the focus groups was to supplement data collected from the questionnaires. Therefore, focus group topics of discussion relate to the variables measured quantitatively, including substance use and resistance skills. The analysis of focus groups employed an open coding process to elicit themes from the focus group data.

Although the qualitative methodology for this study employed methods from grounded theory, the analytic process was emergent and did not strictly follow one particular methodology. The process began with open coding of focus group

transcriptions in which two researchers independently assigned codes to statements related to the research questions. The transcriptions were analyzed for themes related to substance use, attitudes about substances, attitudes about the curriculum, and helpful prevention strategies for the participants.

This researcher and the Principal Investigator for the project analyzed transcriptions independently and manually assigned codes to pertinent statements. Each research also independently developed a list of preliminary codes. The researchers met after coding transcripts to achieve consensus on the preliminary codes. The researchers, then, independently coded the transcripts again with the aim of combining redundant codes and achieving greater specificity of codes when necessary. The researchers met to achieve consensus on these secondary codes. A third repetition of this process was used to further combine related codes and achieve the final list of codes and themes. Every theme was a result of ideas that occurred repeatedly in each of the focus groups. Codes that were not supported were either dropped or labeled as anomalies. The coding procedure continued until codes reached the point of saturation in which further analysis resulted in no addition themes and the researchers agreed on the core themes (Strauss, 1987; Lofland & Lofland, 1995).

This researcher conducted the focus groups, administered questionnaires, and analyzed both qualitative and quantitative data. The interpretations are, therefore, informed by the researcher's role in data collection and analysis.

CHAPTER IV: FINDINGS

Quantitative Analyses

Participants

The sample for this study consists of students ages 14 through 19 attending four alternative high schools: School of Choice 1, School of Choice 2, Disciplinary School 1, and Disciplinary School 2. The principal at each school worked with the researcher to identify similar groups of students in order to achieve a similar experimental and comparison conditions at each school. Although there were 107 students who agreed to participate in the study at pretest and 70 who completed posttest, the main analyses for this study include only the 41 students who completed all three questionnaires: pretest, posttest, and six-week follow-up. Analyses for the sample that completed pretest and posttests but no follow-up are also included to illustrate any important differences in the sample after attrition. Table 4.1 presents demographic information for students who completed only the pretest and posttest questionnaires, and Table 4.2 presents demographic information for those completing questionnaires at follow up as well.

Table 4.1

Demographics at Pretest for Entire Sample Prior to Attrition

Group		Experimental N=37	Comparison N=33
Age			
	Mean	15.89	16.9394
	Standard Deviation	1.37	1.43
	Range	14-19	14-19
	t = 3.115, df = 66.26, p = .003		
Gender			
	Female	16 (43.2%)	18 (54.5%)
	Male	21 (56.8%)	15 (45.5%)
	Chi-square = .892, df = 1, p = .345		
Ethnicity			
	Black/African American	5 (13.5%)	4 (12.1%)
	Hispanic	19 (51.4%)	15 (45.5%)
	White	10 (27%)	9 (27.3%)
	Other	3 (8.1%)	5 (15.2%)
	Chi-square = .909, df = 3, p = .823		
School			
	School of Choice 1	9 (24.3%)	13 (39.4%)
	School of Choice 2	14 (37.8%)	9 (27.3%)
	Disciplinary School 1	7 (18.9%)	7 (21.2%)
	Disciplinary School 2	7 (18.9%)	4 (12.1%)
	Chi-square = 2.41, df = 3, p = .491		
Past Month Substance Use			
	Used Alcohol	22 (62.9%)	18 (56.3%)
	Chi-square = .303, df = 1, p = .582		
	Used Marijuana	15 (42.9%)	12 (37.5%)
	Chi-square = .199, df = 1, p = .655		
Treatment for Substance Use			
	Currently in treatment	2 (5.4%)	1 (3%)
	Completed treatment	5 (13.5%)	4 (12.1%)
	No	30 (81.1%)	28 (84.8%)
	Chi-square = .286, df = 2, p = .867		
Participation in Creating Adapted Materials			
	Yes	4 (10.8%)	3 (9.1%)
	No	32 (86.5%)	30 (90.9%)
	Chi-square = .077, df = 1, p = .781		

Table 4.2

Demographics at Pretest for Group Completing Follow-up Measures

Group		Experimental N=18	Comparison N=23
Age			
	Mean	15.83	16.91
	Standard Deviation	1.25	1.41
	Range	14-18	14-19
	T = 2.59, df = 38.6, p=.013		
Gender			
	Female	11 (61.1%)	13 (56.5%)
	Male	7 (38.9%)	10 (43.5%)
	Chi-square = .088, df = 1, p = .767		
Ethnicity			
	Black/African American	1 (5.6%)	2 (8.7%)
	Hispanic	7 (38.9%)	11 (47.8%)
	White	7 (38.9%)	7 (30.4%)
	Other	3 (16.7%)	3 (13%)
	Chi-square = .622, df = 3, p=.891		
School			
	School of Choice 1	6 (33.3%)	11 (47.8%)
	School of Choice 2	5 (27.8%)	4 (17.4%)
	Disciplinary School 1	3 (16.7%)	7 (30.4%)
	Disciplinary School 2	4 (22.2%)	1 (4.3%)
	Chi-square = 4.438, df = 3, p =.218		
Past Month Substance Use			
	Used Alcohol	16 (88.9%)	15 (65.2%)
	Chi-square = 3.01, df = 1, p = .080		
	Used Marijuana	10 (55.6%)	10 (43.5%)
	Chi-square = .589, df = 1, p = .443		
Treatment for Substance Use			
	Currently in treatment	1 (5.6%)	1 (4.3%)
	Completed treatment	1 (5.6%)	3 (13%)
	No	16 (88.9%)	19 (82.6%)
	Chi-square = .657, df = 2, p = .72		
Participation in Creating Adapted Materials			
	Yes	2 (11.1%)	2 (8.7%)
	No	15 (83.3%)	21 (91.3%)
	Chi-square = .102, df = 1, p = .749		

Age

Demographic information was collected using the questionnaire found in Appendix D. For both the group of students who completed pretests and posttests and the sample that included only those completing follow-up, the mean age for the experimental group was approximately one year younger than the mean age of the comparison group. The mean age of the comparison group is approximately 16 for the experimental group and 17 for the comparison group in both samples. Independent samples t-tests reveal that this difference is significant for both the full sample (t=3.115, df = 66.26, p=.003) and the sample that completed the follow-up (t=2.59, df = 39, p=.013).

Gender

The full sample included 16 females and 21 males in the experimental group and 18 females and 15 males in the comparison group. A chi-square analysis indicates that these differences are not significant (Chi-square = .892, df = 1, p=.345). For the smaller sample that completed follow-up measures, there were 11 females and 7 males in the experimental group and 13 females and 10 males in the comparison group. Gender did not differ significantly in this sample (Chi-square = .088, df = 1, p = .767).

Ethnicity

In order to preserve power with a small sample size, the ethnicity categories were collapsed so that all ethnicities other than Black/African American, Hispanic, and White were coded as Other. For the full sample, the experimental group included 5 Black/African Americans, 19 Hispanics, ten Whites, and 3 students of other ethnicities. The comparison group included 4 Black/African Americans, 15 Hispanics, 9 Whites, and 5 students of other ethnicities. A chi-square analysis indicates that these differences are

not significant (Chi-square = .909, df = 3, p = .823). For the sample completing the follow-up measures, the experimental group included 5 Black/African Americans, 19 Hispanics, 10 Whites, and 3 students of other ethnicities. The comparison group included 4 Black/African Americans, 15 Hispanics, 9 Whites, and 5 students of other ethnicities. These differences were not significant (Chi-square = .622, df = 3, p = .891). Although the sample includes a diverse group of students, the large number of Hispanic students is noteworthy. Approximately half of the full sample is Hispanic. Among those completing the follow-up, a smaller percentage of students are Hispanic, indicating greater attrition among this ethnic group. The large number of Hispanics in both the full and follow-up samples may be important for the outcomes of the study since Keepin' it REAL was designed to include components that are effective in reducing substance use among Mexican-American youth.

School

In the full sample, the experimental group included 9 students from School of Choice 1, 14 students from School of Choice 2, 7 students from Disciplinary School 1, and 7 students from Disciplinary School 2. The comparison group included 13 students from School of Choice 1, 9 from School of Choice 2, 7 from Disciplinary School 1, and 4 students from Disciplinary School 2. A Chi-square analysis indicates that the number of students from each school does not differ significantly between groups (Chi-square = 2.41, df = 3, p = .491). In the sample completing follow-up measures, the experimental group included 6 students from School of Choice 1, 5 students from School of Choice 2, 3 students from Disciplinary School 1, and 4 students from Disciplinary School 2. The comparison group included 11 students from School of Choice 1, 4 from School of

Choice 2, 7 from Disciplinary School 1, and 1 student from Disciplinary School 2. As with the full sample, these differences are not significant by group (Chi-square = 4.438, df = 3, p = .218).

Past Month Substance Use

Students were asked how many times during the past month they had used several different substances. The variable, Alcohol Use, was created by combining the variables, Beer Use, Wine Use, and Liquor Use. In the experimental group, almost 63% of students reported using alcohol at least once during the past month, and 56 % of students in the comparison group reported use. This difference was not significant (Chi-square = .303, df = 1, p = .582). With past month marijuana use, almost 43 % of students in the experimental group reported using marijuana at least once during the past month, and 37.5% of comparison group students reported use. This difference was not significant either (Chi-square = .199, df = 1, p = .655).

Among students who completed follow up measures, almost 89% of experimental group students reported using alcohol at least once during the past month, and 65.2% of comparison group students reported use. This difference is significant using a significance value of .10, indicating that the groups are different with respect to alcohol use (Chi-square = 3.01, df = 1, p = .080). For marijuana use, 55.6% of experimental group students reported use in the past month, and 43.5% of comparison group students reported use. This difference was not significant (Chi-square = .589, df = 1, p = .443).

Treatment for Substance Use

In response to a question asking whether they have ever received treatment for substance use, 2 students in the full sample from the experimental group responded that

they were currently receiving treatment and 5 had completed a treatment program. In the comparison group, 1 student was currently in treatment and 4 had completed a treatment program. Chi-square analysis indicates that the groups did not differ significantly in whether they had received treatment (Chi-square = .286, df = 2, p = .867). In the sample completing follow-up measures, 1 student in the experimental group was receiving treatment and 1 had completed a treatment program. In the comparison group, 1 was receiving treatment and 3 had completed a program. As with the full sample, these differences were not significant by group (Chi-square = .657, df = 2, p = .72).

Participation in Creating Adapted Materials for the Curriculum

This question asked students whether they had participated in creating the videos or revised workbook materials for the adapted curriculum. A few of the students had participated in this earlier phase of the project. In the full sample, 4 students said they had helped to create the adapted curriculum materials, and 3 in the comparison group said they had helped in this process. These differences were not significant by group (Chi-square = .077, df = 1, p = .781). For the sample completing follow-up measures, 2 students in the experimental and 2 in the comparison group had helped to create the new materials. This difference also was not significant (Chi-square = .102, df = 1, p = .749).

School Culture Results

In addition to evaluating whether groups differed in the number of students from each school and whether the school setting had an effect on group differences over time (discussed later in the section on a priori tests), school staff were asked to complete the School Success Profile – Learning Organization measure. The School Success Profile – Learning Organization (SSP-LO) developed by Gary Bowen was used to measure

organizational characteristics that facilitate student learning. This measure was included to determine whether participating alternative schools are significantly different in ways that could facilitate or hinder students' ability to benefit from participation in the Keepin' it REAL curriculum.

A learning organization is a school or other community organization that employs information from staff and key stakeholders to plan, implement, and evaluate practices that help students achieve desired outcomes. The SSP-LO measures staff actions that are consistent with learning organizations using the following six dimensions: team orientation, innovation, involvement, information flow, tolerance for error, and results orientation. The measure includes another six dimensions that measure staff sentiments: common purpose, respect, cohesion, trust, mutual support, and optimism (Bowen, Rose, & Ware, 2006). The items that make up each dimension are displayed in Appendix F.

Questionnaires were administered to teachers and counselors who were told that completing the measure was voluntary. The response rate was low for this measure, with only 27% of teachers and counselors from School of Choice 1, 67% from School of Choice 2, 44% from Disciplinary School 1, and 61% from Disciplinary School 2 completing the questionnaires. This indicates that the responses may not be representative of the entire staff. In a personal communication, Gary Bowen informed the researcher that these were the highest scores he had seen, suggesting that the scores for all of the schools indicate that they are good learning organizations (G. L. Bowen, personal communication, August 16, 2006).

Although the sample size is small, separate one-way ANOVAs were conducted to explore whether schools may differ on any of the dimensions. The only two dimensions

that were significantly different by school using a .10 level of significance were the common purpose dimension (F = 3.906, df = 3, p = .019) and the optimism dimension (F = 2.318, df = 3, p = .096). The score for each dimension is the mean of the scores for the three items that measure the dimension. Scores range from one to six, with high scores indicating stronger agreement that the dimensions exist at the school. The means for each dimension by school are displayed in Table 4.3.

Table 4.3

School Success Profile – Learning Organization Dimension Means by School

		School of Choice 1 N = 12	School of Choice 2 N = 6	Disciplinary School 1 N = 8	Disciplinary School 2 N = 7
Actions	Team Orientation	5.08	5.00	5.27	5.56
	Innovation	5.19	4.8	5.15	5.28
	Involvment	4.92	4.44	4.92	4.67
	Information Flow	5.17	5.06	5.08	5.29
	Tolerance for Error	5.08	5.00	5.08	5.44
	Results Orientation	4.92	4.56	4.46	5.17
Sentiments	Common Purpose	5.47	5.39	4.92	5.72
	Respect	5.19	5.17	4.87	5.5
	Cohesion	4.92	5.11	5.00	5.38
	Trust	4.97	5.22	4.92	5.48
	Mutual Support	4.94	5.39	5.12	5.48
	Optimism	5.22	5.11	4.79	5.57

Although the small sample size makes statistical comparisons between schools difficult, the results indicate that most respondents at each school rated each dimension as an asset. For the most part, participants reported that the staff at their school have a team orientation, a sense of common purpose, and respect for each other and the students.

Equivalency of Groups on Pretest Measures

Because random assignment to conditions was not feasible, the groups were tested for equivalency on the dependent variables at pretest using independent-samples T-Tests. Because of large attrition between posttest and follow-up, the full sample that completed both pretest and posttest was tested for equivalency, and the group of individuals that completed measures at all three times was tested for equivalency. The dependent variables are Intentions to Accept Alcohol, Intentions to Accept Marijuana, Past Month Alcohol Use, and Past Month Marijuana Use. The variable Intentions to Accept Alcohol is a summed scale resulting from the combination of two variables: Intentions to Accept Beer or Wine and Intentions to Accept Liquor. The variable Past Month Alcohol Use is a summed scaled resulting from the combination of three variables: Past Month Beer Use, Past Month Wine Use, and Past Month Liquor Use. Table 4.4 displays the results for the entire sample, and Table 4.5 displays the results for the smaller sample that completed pretest, posttest, and follow-up measures.

Table 4.4

Equivalency of Groups on Pretest measures for the Entire Sample Prior to Attrition

Group	**Experimental N=37**	**Comparison N=33**
Accept Alcohol		
Mean	5	6.48
Standard Deviation	2.51	2.84
t = 2.324, df = 68, p = .023		
Accept Marijuana		
Mean	2.68	3.03
Standard Deviation	1.49	1.77
t = .899, df = 62.8, p = .372		
Alcohol Use		
Mean	3.54	2.21
Standard Deviation	4.18	3.1
t = -1.52, df = 65.895, p = .133		
Marijuana Use		
Mean	1.32	1.39
Standard Deviation	1.76	1.85
t = .160, df = 66.2, p = .873		

Table 4.5

Equivalency of Groups on Pretest measures for Sample Completing Follow-up

Group	**Experimental N=18**	**Comparison N=23**
Accept Alcohol		
Mean	4.11	6.04
Standard Deviation	2.05	2.96
t = 2.462, df = 38.525, p = .018		
Accept Marijuana		
Mean	2.28	2.96
Standard Deviation	1.56	1.87
t = 1.265, df = 38.7, p = .214		
Alcohol Use		
Mean	4.56	2.52
Standard Deviation	4.22	3.3
t = -1.68, df = 31.59, p = .102		
Marijuana Use		
Mean	1.67	1.48
Standard Deviation	1.85	1.85
t =-.323, df = 36.7, p = .748		

The level of significance was set at .10 due to the small sample size. However, in order to reduce the probability of a Type I error resulting from conducting multiple t-tests, a Bonferroni correction was used. The adjusted alpha level for four t-test is .025. For both the full sample and the sample that completed follow-up measures, there is a

significant difference between Intentions to Accept Alcohol at pretest using .10 as the level of significance (Larger sample: t = 2.324, df = 68, p = .023; Smaller sample completing follow-up: t = 2.462, df = 38.525, p = .018). In both cases, the comparison group scored higher, indicating that they would be less likely to accept alcohol if offered.

The difference between groups at pretest for the variable Alcohol Use was not significant (Larger sample: t = -1.52, df = 65.895, p = .133; Smaller sample completing follow-up: t = -1.68, df = 31.59, p = .102). For other dependent variables, there were no significant differences between pretest scores for intervention and comparison groups using either the full sample or the sample of students who completed follow-up measures.

Hypothesis Testing

The four hypotheses for this study were analyzed using a repeated measures Multivariate Analysis of Variance (MANOVA). The MANOVA requires that the data meet several assumptions in order to robustly detect differences between groups over time. These assumptions are normality of the distribution, linearity of the dependent variables, homogeneity of variance, absence of multicollinearity, absence of outliers, and independence of observations. These data were tested for violations of these assumptions as described below.

Tests of MANOVA Assumptions

Normality. The variables were evaluated for normality using histograms and measures of skewness and kurtosis. The dependent variables were not normally distributed and attempts to transform the variables in order to achieve normality were unsuccessful. The lack of normality in the distribution is in part due to the fact that large numbers of students who reported using alcohol and marijuana very rarely and large

numbers of students reported using these substances very frequently, with fewer students falling in the middle of the distribution.

Linearity. The linear relationship of each dependent variable with the other variables was examined using scatterplots. The fact that the variables are actually ordinal in nature makes it more difficult to assess linearity. The scatterplots did not indicate linear relationships among the variables and attempts to transform the variables to achieve linearity were unsuccessful.

Homogeneity of Variance. The variables were tested for homogeneity of variance using the Box's M test. This test was significant ($p = .005$), indicating that the variance for the dependent variables was not equal across groups. The Box's M test is vulnerable to violations of the normality assumption, and a probability level of .01 or less is often used (Hair, Anderson, Tathum, & Black, 1998). Since the variables in this analysis are not normally distributed, the results of the Box's M test may not be valid.

Multicollinearity. The dependent variables were analyzed for multicollinearity using the collinearity diagnostics in SPSS. If the condition index for the variables is higher than 30 for any of the five dimensions included in the analysis, the data has a problem with multicollinearity. A condition index of 15 indicates a potential problem. None of the values of the Condition Index were higher than 10 for any dimension, indicating that multicollinearity is not a serious problem for the analysis.

Outliers. The data was examined for multivariate outliers using Mahalanobis Distance with $p < .05$. There were three cases that were considered outliers using this criteria. An analysis of the data with and without these cases indicated that they had a

negative effect on the power of the analysis to detect differences between groups and they were eliminated from the sample.

Missing data. An analysis of missing data was conducted to determine the number of cases missing for each variable and the number of variables missing for each case. The sample includes seven participants who completed a pretest and follow-up but did not complete a posttest questionnaire. The majority of the missing data resulted from the lack of a posttest for these cases. Other than these seven cases, only three cases were missing data on one of the dependent variables. Because the sample size is small, the missing data for these cases was replaced with the mean for the scores of the variable at the other two testing occasions. For example, if a case was missing data for the marijuana use variable at posttest, the value was replaced with the mean of the pretest and follow-up scores for marijuana use. In order to ensure that replacing the missing values with the mean would not have a substantial impact on the analysis, the analysis was conducted with and without the seven cases that did not complete a posttest. There was no difference in the patterns of significance with the cases removed. They were, therefore, included in the analysis to increase the sample size and power.

Independence of Observations

MANOVA requires that the dependent measures for each participant be uncorrelated with responses from other participants (Hair et al., 1998). Because questionnaires were administered to groups of students, it is possible that conditions under which they were completed could have resulted in correlations among participants' scores. Students may have also been able to consult with each other while completing the questionnaire. In order to avoid this problem, the research was present while students

completed questionnaires and asked students to work independently. In one case, however, the researcher discovered one student completing another student's questionnaire and intervened to ask the students to complete their own questionnaires without interacting with each other.

Reliability and Validity

Test-Retest Reliability. The dependent variables were evaluated for test-retest reliability by assessing the correlation of pretest and posttest scores for the comparison group. Test-retest reliability is typically evaluated using two weeks as the interim time between testing periods, and correlations of .70 or .80 are typically deemed to be acceptable (Rubin & Babbie, 2005). For this study, posttest questionnaires were administered six weeks after the pretest, but the correlations indicate good test-retest reliability. The Pearson correlation coefficient was used for this assessment. The correlation coefficient for pretest and posttest scores for each dependent variable is provided below:

- Intentions to Accept Marijuana = .910
- Intentions to Accept Alcohol = .941
- Marijuana Use = .929
- Alcohol Use = .807

All of the dependent variables have acceptable test-retest reliability, indicating that the measures for these variables are stable over time (Rubin & Babbie, 2005).

Internal Consistency Reliability. The variable Intentions to Accept Alcohol was created by using the sum of the scores for the two original variables in the questionnaire, Intentions to Accept Beer/Wine and Intentions to Accept Liquor. The internal consistency

of this scale was evaluated using Cronbach's alpha and found to have good reliability (alpha = .917). The variable Alcohol Use was created by summing the scores for the three original variables, Beer Use, Wine Use, and Liquor Use. This scale also demonstrated good internal consistency reliability (alpha = .901). The strong internal consistency reliability for these scales indicates that the scores for items combined to create the scale are consistently related to each other.

Factorial Validity. The scales used to measure the variables Intentions to Accept Alcohol and Alcohol Use were evaluated for Factorial Validity using principal components analysis. The results of the analysis indicate that the items included in these scales loaded on the same factor or dimension, suggesting that the items within the scale measure the same construct (Rubin & Babbie, 2005). For Intentions to Accept Alcohol, principal components analysis indicated that the correlation between the two original items, Intentions to Accept Beer or Wine and Intentions to Accept Liquor was .880. The two variables loaded on the same factor and together explained 94% of the variance explained by the individual variables.

For Alcohol Use, principal components analysis indicated that the correlations between the three original variables, Beer Use, Wine Use, and Liquor Use, were .781, .758, and .693. The three variables loaded on the same factor and together explained 83.5% of the variance explained by the individual variables.

A Priori Tests

Although Age was the only control variable that differed significantly between groups at pretest, a priori tests were conducted to determine whether the demographic variables affected the difference between groups on the dependent variables over time.

Separate repeated measures Multivariate Analysis of Variance (MANOVA) tests were performed to assess the affect of age, gender, ethnicity, and school. The only variable that had a significant interaction effect by group and time was Age. Thus, Age is the only demographic variable that seems to influence the difference between groups over time on the dependent variables. In order to maximize the power of the analysis, only Age was included as a control variable given the results of the a priori tests.

Hypothesis Testing Results

A repeated measures Multivariate Analysis of Variance (MANOVA) was conducted to analyze the data for differences in group change over time at pretest, posttest, and six-week follow-up. This analysis was selected because it allows for multiple dependent variables and reduces the likelihood of a Type I error resulting from conducting multiple separate analyses. The model also allows for evaluating the effects of interactions among the independent variable and control variables to determine whether the control variables have an impact on the analysis. The analysis was conducted using SPSS. The model for this analysis included one independent variable (Experimental versus Control Group) and four dependent variables (Intentions to Accept Marijuana, Intentions to Accept Alcohol, Past Month Marijuana Use, and Past Month Alcohol Use). The control variable, Age, was also included in the analysis because a priori analyses revealed a significant age difference between groups at pretest and a significant interaction between age and group differences over time. In the interest of maximizing the power of the test, control variables that did not differ significantly by group were not included in the analysis. In addition, the number of dependent variables was limited to those that were most likely to be affected by the curriculum based on a priori analyses

and focus group data. For example, the variable perceptions of danger of marijuana was not included in the analysis because the groups indicated in focus groups that they do not perceive marijuana as a dangerous substance. A priori MANOVA analyses also revealed that this variable did not differ by group over time. The results for the multivariate model are displayed in Table 4.6. Results from univariate tests are presented for each hypothesis below.

Table 4.6

MANOVA Multivariate Tests

Effect	df	F	Partial Eta Squared	P
		Between Subjects		
Group	4	1.934	0.223	0.134
Age	20	1.982	0.28*	0.014
Group x Age	16	1.836	0.224*	0.036
		Within Subjects		
Time	8	2.178	0.431	0.069
Time x Group	8	2.973	0.508*	0.019
Time x Age	40	1.523	0.363*	0.046
Time x Group x Age	32	1.581	0.37*	0.049

* indicates $p < .05$

The multivariate tests indicate that there is a significant difference in groups over time on the dependent variables. The age difference between groups is significant as is the interaction between group and age. The interaction between age, group, and time is also significant, indicating that the age difference affects the differing trends in changes in groups over time. This will be examined in post hoc analyses. Table 4.7 displays

means and standard deviations for the dependent variables by group over time. Lower scores on the variables for Intentions to Accept Marijuana and Intentions to Accept Alcohol indicate greater intentions to accept the substances. Lower scores on Alcohol Use and Marijuana Use indicate lower usage.

Table 4.7

Means and Standard Deviations for Dependent Variables by Group and Time

	Experimental Group						Comparison Group					
	Pretest		Posttest		Follow-up		Pretest		Posttest		Follow-up	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Accept Alcohol	4.11	2.05	4.78	2.28	5.33	2.27	6.04	2.96	5.78	2.66	5.56	1.87
Accept Marijuana	2.28	1.56	2.44	1.42	2.89	1.37	2.96	1.87	2.83	1.7	2.74	1.51
Alcohol Use	4.56	4.22	3.78	3.84	2.17	2.43	2.52	3.30	2.26	2.81	2.35	2.37
Marijuana Use	1.67	1.85	1.44	1.54	1.22	1.73	1.48	1.86	1.39	1.78	1.61	1.85

The Mauchly's Test of Sphericity was used to test whether the variance matrix is circular in form. The test was not significant for Intentions to Accept Alcohol, Intentions to Accept Marijuana, or Alcohol Use, indicating that the data does not violate the assumption of sphericity for these variables. The test was significant, however, for Marijuana Use. For this variable, the statistics were interpreted with the understanding that sphericity is not assumed using the Greenhouse-Geisser statistic.

Table 4.8

Mauchly's Test of Sphericity

Within Subjects Effect	Measure	Mauchly's W	Approximate Chi-Square	df	p
Time	Accept Alcohol	0.942	1.724	2	0.422
	Accept Marijuana	0.899	3.079	2	0.215
	Alcohol Use	0.977	0.662	2	0.718
	Marijuana Use	0.666	11.784	2	0.003

Hypothesis 1: Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of alcohol. The variable, Intentions to Accept Alcohol, is a summed scaled created by combining scores for the two original variables in the questionnaire, Intentions to Accept Wine or Beer and Intentions to Accept Liquor. Table 4.9 displays the univariate MANOVA results.

Table 4.9

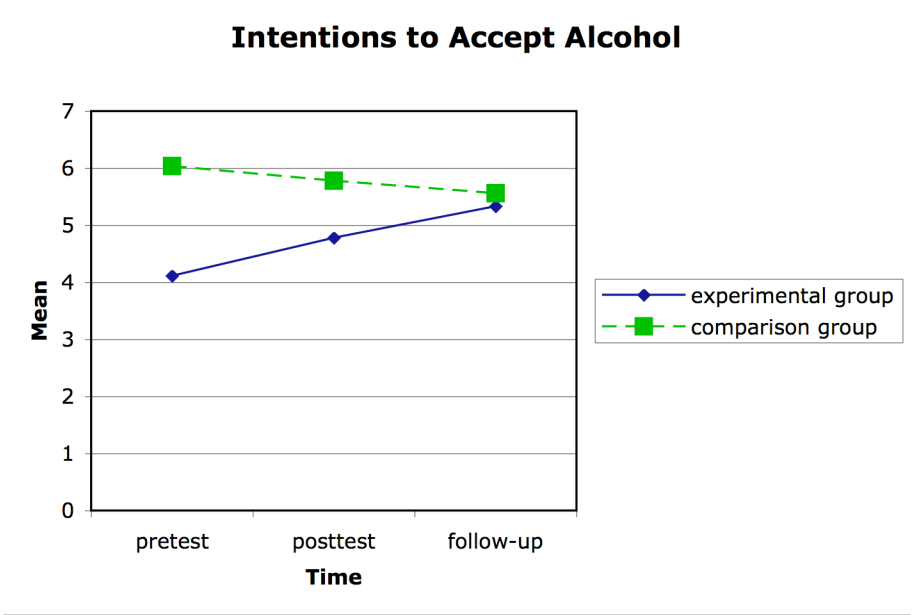
Univariate MANOVA Results for Intentions to Accept Alcohol

Source	Df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	13.473	13.473	0.734	0.024	0.398
Error	30	550.537	18.351			
Group x Time	2	14.382	7.191	8.95***	0.23	<.001
Group x Time x Age	8	7.986	0.996	1.24	0.142	0.292
Time	2	1.832	0.916	1.140	0.037	0.327
Error	60	48.211	0.804			

*** indicates p <.001

The results of the univariate test indicate that there is a significant difference in Intentions to Accept Alcohol between groups over time ($F(2, 60) = 8.95$, $p<.001$). Partial eta squared was used to evaluate effect size and represents the proportion of the variance that is attributable to the effect of the dependent variable. In this case, a value of .23 indicates that 23% of the difference in group means is attributed to the effect of the dependent variable, Intentions to Accept Alcohol. The original variables are measured on a likert scale with a lower score indicating that a student agrees or strongly agrees that they would accept alcohol if offered and a higher score indicating that the student disagrees or strongly disagrees that they would accept the offer. In this case, the experimental group's scores indicate that they were more likely to disagree that they would accept an offer than the comparison group over time. Figure 4.1 displays a plot of group scores over time.

Figure 4.1



The figure indicates that scores in the experimental group's scores increased over time while scores in the comparison group decreased slightly. The experimental group was therefore less likely to agree that they would accept an offer of alcohol than the comparison group over time. The figure also illustrates the difference in scores between groups at pretest which is statistically significant. The experimental group was more likely to agree that they would accept an offer of alcohol at pretest than the comparison group. Because the groups differ on this variable, the results should be interpreted with caution.

Hypothesis 2: Participation in adapted versions of Keepin' it REAL will result in reduced intentions to accept an offer of marijuana. The variable, Intentions to Accept Marijuana, is measured with a single likert scale questionnaire item that asks students whether they agree that they would accept an offer of marijuana. Lower scores indicate that students either agree or strongly agree that they would accept an offer, whereas higher scores indicate that they disagree or strongly disagree that they would accept an offer. The results for the univariate analysis are presented in Table 4.10.

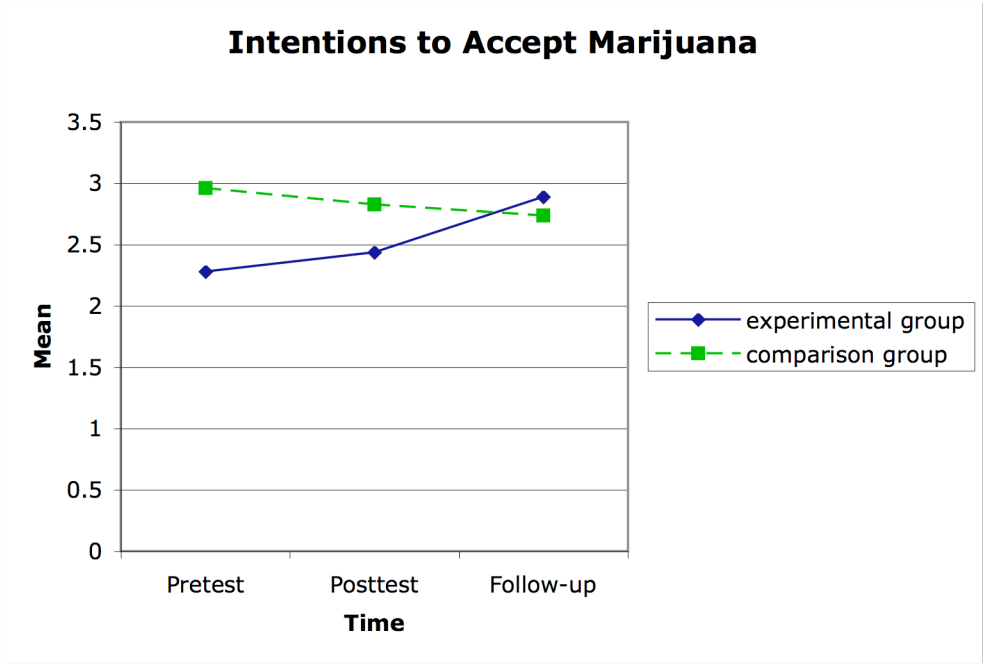
Table 4.10

Univariate MANOVA Results for Intentions to Accept Marijuana

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	0.152	0.125	0.025	0.001	0.874
Error	30	178.43	18.351			
Group x Time	2	1.091	0.546	1.041	0.034	0.359
Group x Time x Age	8	1.974	0.247	0.471	0.059	0.872
Time	2	0.141	0.071	0.135	0.004	0.874
Error	60	31.451	0.524			

The group by time interaction for this variable was not significant, indicating that groups did not differ significantly over time in Intentions to Accept Marijuana ($F(2, 60) = 1.041$, $p = .359$). Figure 4.2 displays the trends in Intentions to Accept Marijuana over time.

Figure 4.2



In this case, the groups also differ at pretest, although the difference was not significant. The trend is similar to that for the variable, Intentions to Accept Alcohol, with the experimental group scores increasing over time while the scores for the comparison group decreased. Since the analysis suffers from lack of power due to small sample and violation of assumptions, the trend warrants further study.

Hypothesis 3: Participation in adapted versions of Keepin' it REAL will result in reduced alcohol use. The variable, Alcohol Use, was created by combining the three original variables, Beer Use, Wine Use, and Liquor Use. The original variables were measured on a likert scale with low scores indicating less use of alcohol than higher scores. The scores for the three variables were summed for each case, resulting in the score for the variable, Alcohol Use. The univariate analysis results are presented in Table 4.11.

Table 4.11

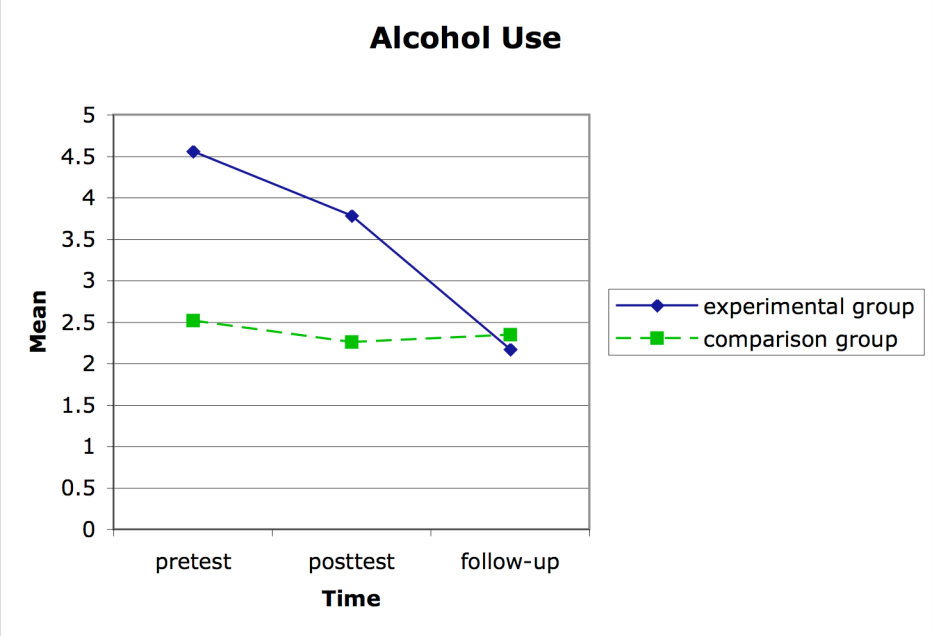
Univariate MANOVA Results for Alcohol Use

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	54.519	54.519	3.209	0.097	0.083
Error	30	509.662	16.989			
Group x Time	2	19.889	9.944	3.637*	0.108	0.032
Group x Time x Age	8	68.537	8.567	3.133**	0.295	0.005
Time	2	32.195	16.098	5.887**	0.164	0.005
Error	60	164.071	2.735			

* indicates p <.05; ** indicates p <.01.

The group by time interaction for Alcohol Use is significant, indicating that there is a significant difference in alcohol use between groups over time (F (2, 60) = 3.637, p<.05). The partial eta squared value is .108, indicating that Alcohol Use accounts for 10.8% of the difference in group means over time. The interaction between group, time, and age is also significant, indicating that the age difference between groups may be influencing the difference in mean scores over time. This will be examined further in post hoc analyses. Figure 4.3 displays the trends for each group over time for Alcohol Use.

Figure 4.3



The figure indicates that scores for Alcohol Use decreased over time for the experimental group and remained fairly stable for the comparison group, indicating that the experimental group reported significantly greater decreases in alcohol use than the comparison group. As with the variable, Intentions to Accept Alcohol, the difference between scores at pretest is noteworthy. However, in this case, the difference is not statistically significant ($p = .102$).

Hypothesis 4: Participation in adapted versions of Keepin' it REAL will result in reduced marijuana use. The variable, Marijuana Use, was measured with a single likert scale item for which low scores indicate less use than higher scores. The univariate results for Marijuana Use are presented in Table 4.12.

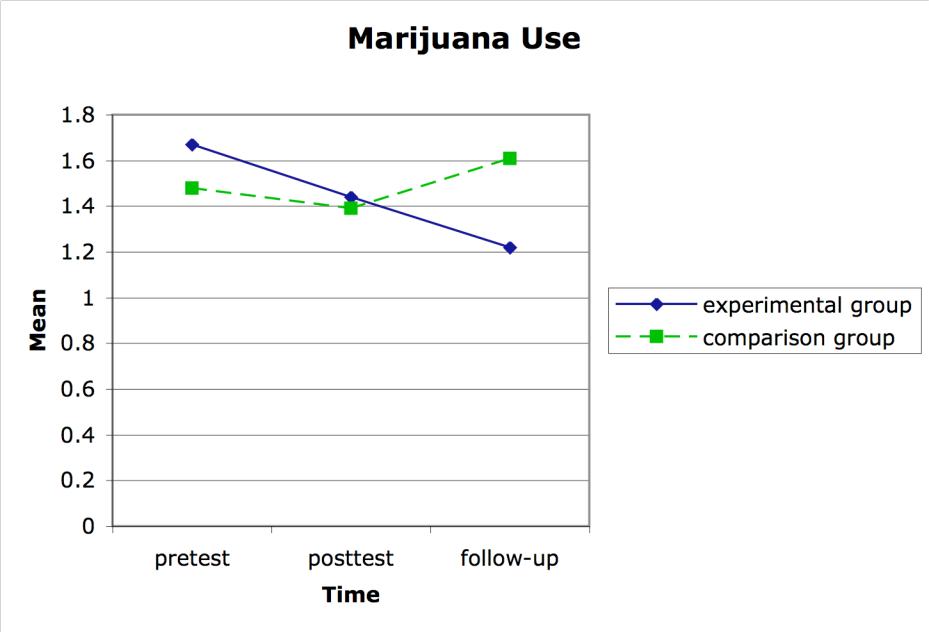
Table 4.12

Univariate MANOVA Results for Marijuana Use

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	1.271	1.271	0.226	0.007	0.638
Error	30	169.003	5.633			
Group x Time	1.5	1.235	0.824	1.318	0.042	0.272
Group x Time x Age	6	1.699	0.283	0.453	0.057	0.839
Time	1.5	1.304	0.870	1.392	0.044	0.256
Error	45	28.116	0.625			

The group by time interaction for Marijuana Use is not significant, indicating that the groups did not differ in their use of marijuana over time (F (1.5, 30), p = .272). Figure 4.4 displays the trends in Marijuana Use for each group over time.

Figure 4.4



Although the difference is not significant, the figure illustrates that the experimental group's marijuana use decreased steadily over time, while the comparison group's use decreased slightly and then increased. This trend may warrant further study due to lack of power in the MANOVA analysis due to small sample size and violation of assumptions.

Post-Hoc Analyses

MANOVA Results for Pretest and Posttest with Sample that Completed Follow-Up. A post hoc analysis was conducted to determine whether any group differences were evident at posttest for the small sample that completed the questionnaires at all three times, pretest, posttest, and follow-up. This analysis and a separate analysis with the larger sample that completed only pretest and posttest questionnaires were conducted to determine whether they might be important differences between the students who dropped out of the study after posttest and those who completed the follow-up measure.

Using a significance level of .10, the overall model was significant. As with the main analysis which included follow-up scores, the interaction between group and age was significant and the interaction between time, group, and age was significant. This again indicates that the age difference between the groups influences change on the dependent variables over time.

For this analysis, only the variable Intentions to Accept Alcohol was significant. The variables measuring Marijuana Use and Alcohol Use may not have been sensitive enough to detect changes between pretest and posttest because they ask students to report their use over the past month and the duration of the curriculum was approximately six weeks. If students only began to decrease use after a few weeks of participation, a large change might not be detected by the measures of use. This may explain the significant decrease in Alcohol Use for the experimental group when the follow-up measure is included in the analysis and the absence of this significant effect when only the pretest and posttest scores are included.

MANOVA Results for Pretest and Posttest with Sample that Dropped Out of Study. In order to further assess differences between the full sample and the sample of students that completed questionnaires at all three measurement points (pretest, posttest, and follow-up), a MANOVA was conducted examining the full sample at pretest and posttest on the dependent variables.

This analysis indicates that there was no significant time by group interaction and, therefore, no significant difference between groups over time. None of the univariate tests were significant. Since this analysis includes a larger sample size, it is reasonable to assume greater power than in the MANOVA than for the smaller sample that completed

measures at all three time points. The lack of significant effects indicates that the group that continued participation through the follow-up is different from the group that dropped out of the study after the posttest. As in the other analyses, there is a significant age difference on scores for the dependent variables.

Post Hoc Analyses of Age Differences

The significant effect of age on group differences for the dependent variables over time indicates a need to examine results for different age groups. In order to simplify the analysis, the variable Age, which originally consisted of six categories (14, 15, 16, 17, 18, and 19) was recoded into a dichotomous variable. The mean for age is 16.4, and the sample distribution is evenly divided for students between the ages of 14 and 16 (48.8%) and those between the ages of 17 and 19 (51.2%). Therefore, the two categories of the recoded age variable consisted of two age groups: one including students between the ages of 14 and 16 and a second including students between the ages of 17 and 19. Separate MANOVA analyses were conducted for each age group.

Results for Younger Students. The multivariate MANOVA results for the younger age group are presented in Table 4.13 below.

Table 4.13

Multivariate MANOVA Results for Younger Students

Effect	Df	F	Partial Eta Squared	P
		Between Subjects		
Group	4	1.603	0.299	0.225
		Within Subjects		
Time	8	1.816	0.569	0.177
Time x Group	8	2.654	0.659	0.068

With the group divided into two age groups, the sample becomes very small (8 students in the comparison group and 12 in the experimental group). Therefore, the level significance used for this analysis is p = .10. Using this criteria, there is a significant time by group interaction for the overall effect of the dependent variables (p = .068) with a partial eta squared of .659 indicating that the combination of dependent variables account for 65.9% of the difference in group means.

The univariate analyses indicate the same pattern of significance as that for the analysis which included both age groups. Intentions to Accept Alcohol and Alcohol Use were both significantly different between groups over time. The univariate results for the variable Intentions to Accept Alcohol is displayed in Table 4.14.

Table 4.14

Univariate MANOVA Results for Intentions to Accept Alcohol Among Younger Students

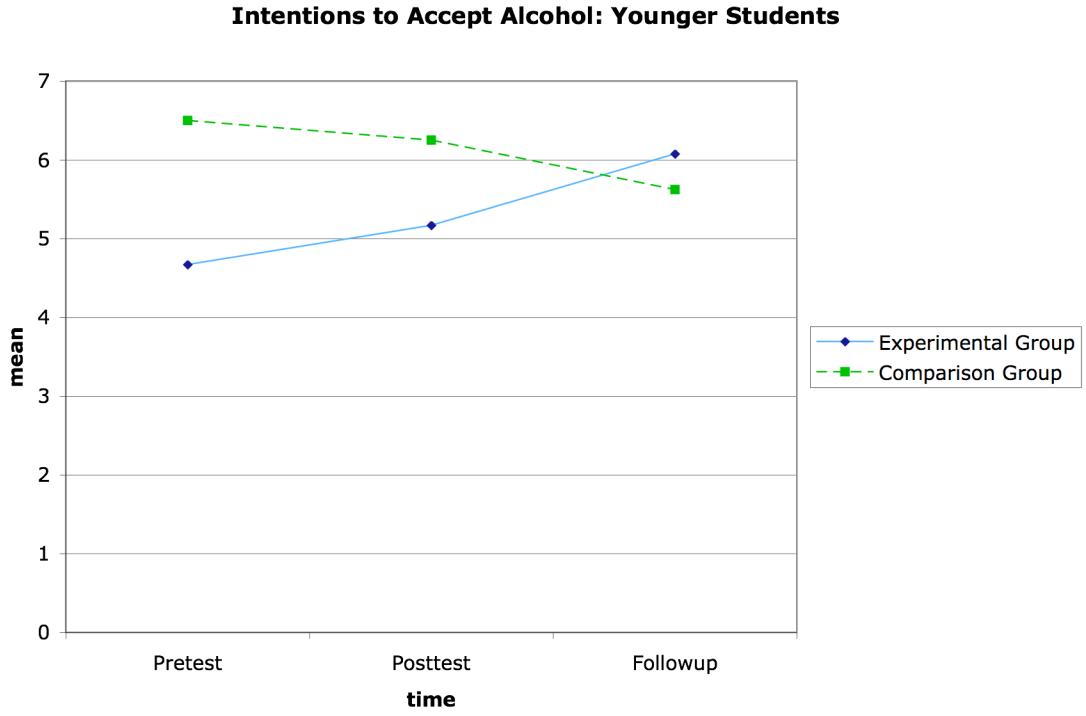
Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	9.669	9.669	0.585	0.031	0.454
Error	18	297.597	16.533			
Group x Time	2	13.106	6.553	5.483**	0.233	0.008
Time	1	0.706	0.353	.295	0.016	0.746
Error	36	14.861	0.413			

** indicates p < .01

For the younger students, Intentions to Accept Marijuana remains significant F (2, 36) = 5.483, p = .008) indicating that the groups differ in Intentions to Accept Alcohol over time. The partial eta squared value is .233, indicating that 23.3% of the difference

between the comparison and experimental group means is attributed to this variable. Figure 4.5 displays the trends by group over time.

Figure 4.5



The trends illustrated in Figure 4.5 are similar to those resulting from the overall analysis. The two groups differ at pretest and the experimental group scores increase over time while the comparison group scores decrease. Since higher scores indicate that students are more likely to disagree that they would accept an offer of alcohol, the experimental group reports lower intentions to accept alcohol over time compared with the comparison group.

The other variable for which the univariate effects were significant was Alcohol Use. The univariate results for alcohol use are presented in Table 4.15.

Table 4.15

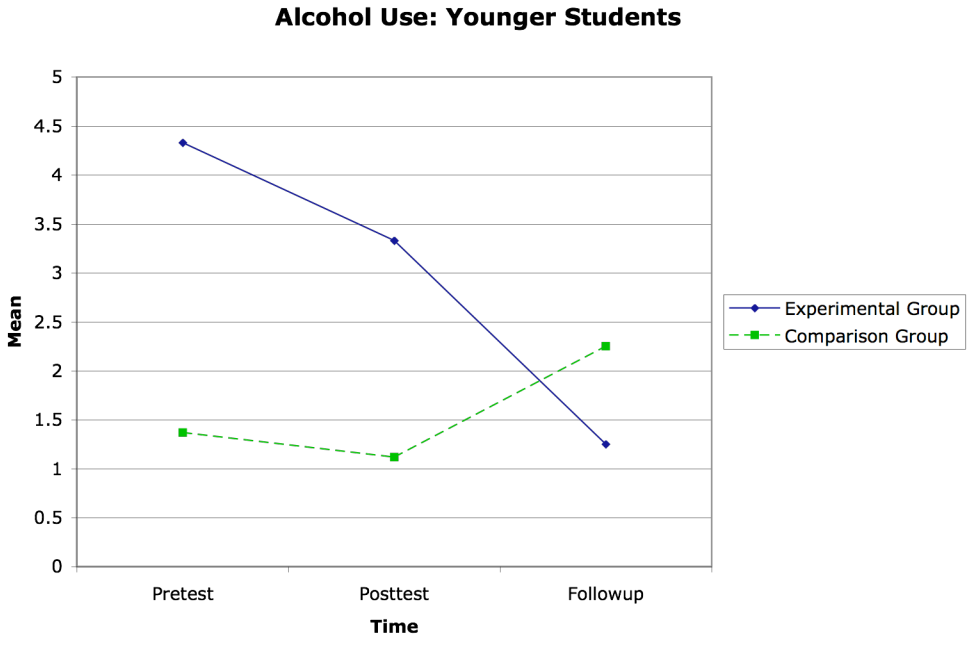
Univariate MANOVA Results for Alcohol Use among Younger Students

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	27.778	16.533	1.237	0.064	0.281
Error	30	126.44	4.215			
Group x Time	2	42.439	21.219	5.714**	0.241	0.007
Time	2	11.772	5.886	1.585	0.081	0.219
Error	36	133.694	3.714			

** indicates p <.01

The group by time interaction is significant, indicating that the groups differ in their alcohol use over time (F(2, 36) = 5.714, p = .007). The partial eta value of .241 indictes that the variable Alcohol Use is responsible for 24.1% of the difference in group means over time. Figure 4.6 illustrates the trends between groups over time.

Figure 4.6



As with the full sample, there is a difference in scores at pretest which may mean that the groups are too different on this variable to be comparable. However, the experimental group decreases steadily in their alcohol use over time which the comparison group decreases slightly at posttest and increases their use by follow-up.

Results for Older Students. Although the patterns of significance and trends over time are similar for the analyses of younger students and the age groups combined, the results are quite different for the analysis including only the older students. The multivariate MANOVA results are displayed in Table 4.16.

Table 4.16

Multivariate MANOVA Results for Older Students

Effect	Df	F	Partial Eta Squared	P
		Between Subjects		
Group	4	0.723	0.153	0.589
		Within Subjects		
Time	8	1.097	0.422	0.427
Time x Group	8	0.933	0.383	0.525

The time by group interaction was not significant for the older students, indicating that there is no significant difference between the groups over time on the dependent variables. Although the model is not significant, the univariate results for the variables Intentions to Accept Alcohol and Alcohol Use are provided below for comparison with the findings for the younger students.

The results for the univariate tests of the variable Intentions to accept Alcohol are provided in Table 4.17.

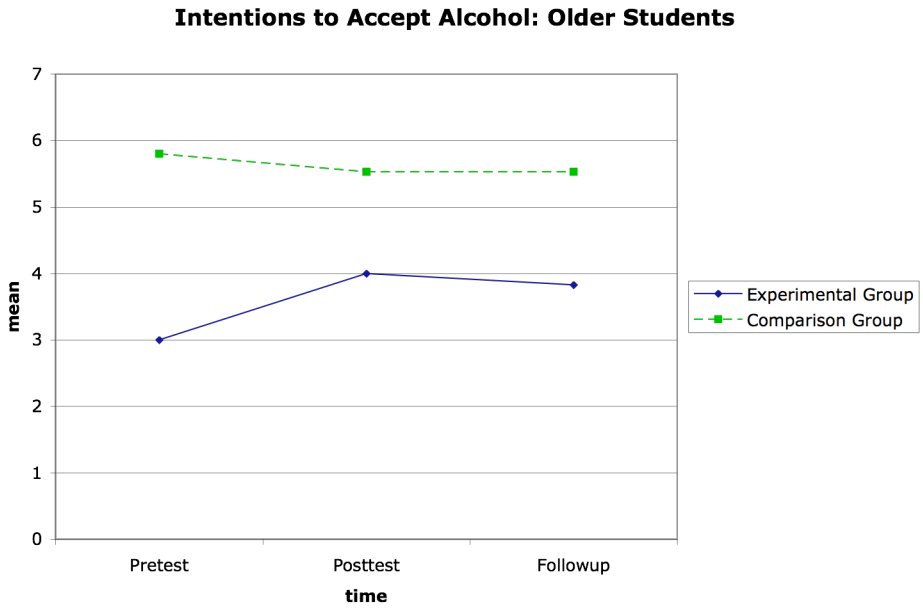
Table 4.17

Univariate MANOVA Results for Intentions to Accept Alcohol Among Older Students

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	52.002	52.002	2.865	0.131	0.107
Error	19	344.856	18.15			
Group x Time	2	4.06	2.03	2.279	0.107	0.116
Time	2	1.267	0.633	0.711	0.036	0.498
Error	38	33.844	0.891			

The group by time interaction is not significant, indicating that the groups do not differ over time in whether they agree that they would accept an offer of alcohol (F (2, 38) = 2.279, p = .116). The figure illustrating trends over time for this variable are provided in Figure 4.7.

Figure 4.7



This figure shows a difference in pretest scores. The experimental group improves slightly at posttest and levels off at follow-up. The comparison group remains fairly stable. This differs from the trends evident with the younger group in which the experimental group increased steadily over time.

The univariate results for Alcohol Use among older students is presented in Table 4.18.

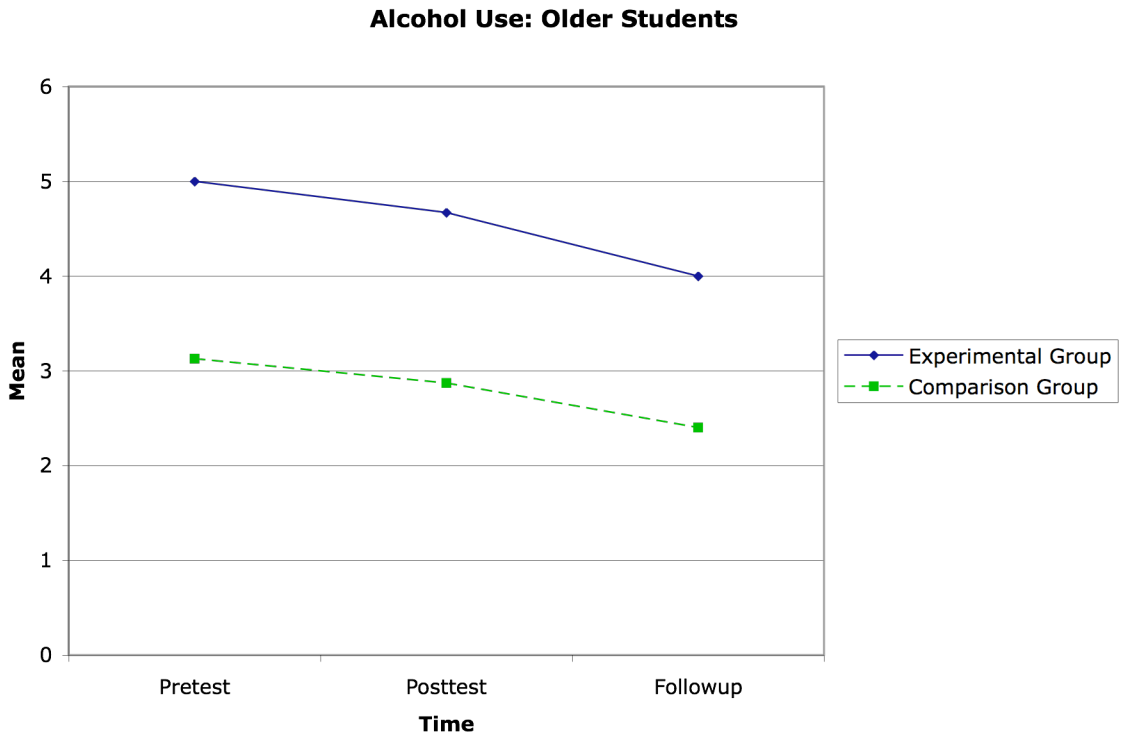
Table 4.18

Univariate MANOVA Results for Alcohol Use Among Older Students

Source	df	Sum of Squares	Mean Square	F	Partial Eta Squared	P
Group	1	39.625	39.625	1.538	0.075	0.23
Error	19	489.644	25.771			
Group x Time	2	0.165	0.083	0.034	0.002	0.967
Time	2	6.641	3.321	1.360	0.067	0.269
Error	38	92.756	2.441			

The group by time interaction is not significant, indicating that older students did not differ significantly by group in Alcohol Use over time ($F(2, 38) = .034$, $p = .967$). The trends for alcohol use by group among older students are displayed in Figure 4.8.

Figure 4.8



The figure indicates that both groups decreased their alcohol use steadily over time, indicating that it is unlikely that the intervention is responsible for any decreases in use among older experimental group participants.

The differing patterns of significance and trends over time indicate that the significant differences evident in the main analysis are primarily a result of significant changes among younger students. This is important because the curriculum may be better suited for younger students. Previous research has shown the effectiveness of Keepin' it REAL with students through age 17 but previous studies have not examined its effectiveness with older students. Based on the results of the post hoc analyses of age differences for this study, older students may not benefit from participation in Keepin' it REAL.

Qualitative Analysis

Coding the qualitative data from student focus groups continued until themes reached the point of saturation in which further analysis resulted in no additional themes. These methods are described in detail in Chapter 3. The researchers agreed on the following core themes: Keepin' it REAL: "Are You Kidding Me?", "Too Late" for Prevention, Youth Recommendations for Prevention, Drugs as Dangerous or Not, Peer Pressure, and Knowing the Good and Bad Sides and Using Safely. Each of these themes is described below and illustrated with statements from the focus groups. The student's school is provided in parentheses after each statement.

Keepin' it REAL: Are you Kidding Me?

One of the primary purposes of the focus group was to provide depth of understanding of the quantitative findings. This theme pertains to the students' reactions to the curriculum. Students overwhelmingly expressed that the curriculum was better suited for younger students who have not initiated use. They expressed feeling that the curriculum materials, including the videos created by their peers, were unrealistic. The subcategories for this theme include: Realistic/Unrealistic and Appropriate Audience for the Curriculum.

Realistic/Unrealistic

The subtheme Realistic/Unrealistic includes the female student's statement from which the researcher derived the label for this theme:

> Female: If you were really trying to teach someone to have skills, most people would just find that amusing and would just look at it and go "are you kidding me?" because they just didn't sound like they knew what they were talking about. It's just a bunch of kids who had never done drugs before so they don't actually have the skills and don't know how hard it is

> to not do drugs that you like. Maybe you should use kids who have actually been through rehab. (School of Choice 1)

This statement captures a commonly expressed sentiment that the materials for the curriculum did not portray realistic substance use situations for high school youth who are already using. Other students expressed this idea as follows:

> Female: Some of the REAL videos, some of the videos weren't really realistic, because in one of them they were janitors and it wasn't really realistic and they didn't care much about it, but the interview part was really good, it was actually like serious about how people felt. (School of Choice 1)
>
> Female: There was one where the dialogue was like "marijuana" (mispronounced) and that was just awful – that would never happen. (School of Choice 1)
>
> Male: I think they were all fake.
> Male: Miss, you know how you can tell it's fake? That girl that popped the pill and they woke her up and she's smiling, she's coming outside and she's supposed to be drunk. (School of Choice 2)

These statements reflect the view that the videos did not portray realistic situations or that they were not portrayed in realistic way. The one exception was a video mentioned by the female student who said that the interview part was good. This video showed students talking about their experiences with substance use and was filmed in a documentary style rather than portraying a scenario with actors. It also emphasized that students who use substances may choose to resist use in certain situations. One student in the video mentioned that he was currently using many substances but chose not to use cocaine at a party because he had decided that cocaine was too dangerous. In another situation, a student in the video described past substance use but said she no longer chose to use because she became pregnant and had a baby.

This theme suggests that students respond more favorably to videos that portray some substance use as normative while emphasizing that, even among students who are using substance frequently, there are some substances or some situations that are too risky to engage in substance use. This idea is consistent with literature on non-abstinence-based prevention or harm reduction. This perspective is grounded in the assumptions that experimentation is a normal part of adolescent development and, therefore, some level of experimentation with substances is considered normative (MacMaster, Holleran, & Chaffin, 2005; Shedler & Block, 1990). In fact, some research suggests that students who have experimented with marijuana by age 18 are more psychologically healthy than those who have not experimented (Shedler & Block, 1990).

Because a culturally grounded curriculum, according to the definition used in this study, must reflect the actual experiences of participating youth (Castro, Barrera, & Martinez, 2004), this theme suggests that the videos for the adapted curriculum are not culturally grounded for the most part, even thought they were created by students.

Appropriate Audience for the Curriculum

Within this subtheme, students expressed that the curriculum is most appropriate for younger students in middle school or elementary school and students who had not yet initiated use. Below are student responses to the researcher's question about who could benefit most from the curriculum.

> Female: I think it was focused more for younger kids, like middle school because a lot of the questions were pretty much common sense. Once you get to high school, whether you do drugs or not, you know what they are, and you know what they have in them. (School of Choice 1)

> Female: To make the videos, you need to know what audience you're targeting. When you're in middle school, you haven't gone to high school yet, you don't know what is about to come whereas when you've already been in high school you've already been around it. We've all tried it before, so reading about avoiding it and everything, I know how to avoid it, I just don't want to. I think the book just needs to be updated. If it's going towards high school kids, then it needs to be like "It's dumb – you could have a really bad trip" What the book says now is probably more middle school, avoiding situations because they haven't really been in those situations. (School of Choice 1)
>
> Male: Kids who aren't using, they don't do it, they don't have the wrong idea, they can see the effects and what it does to you. (Disciplinary School 1)

These statements highlight the students' opinions that the curriculum is better suited for younger students who have not begun using substances. This theme may help to explain the quantitative findings that there were significant effects for participation among younger students but not among older students.

Literature on age differences in substance abuse prevention supports the idea that older adolescents have different needs from younger adolescents. Older adolescents report using more types of substances in greater quantities than younger adolescents (Bonomo & Bowes, 2001; Johnston, O'Malley, Bachman, & Shulenberg, 2005; National Institute on Drug Abuse, 2004). Older adolescents are more likely to report using marijuana and alcohol to reduce negative affect, indicating that they are more likely than younger adolescents to use substances to cope with stress (Newcomb, Chou, Bentler, & Huba, 1988). Because of these differences, it may be more appropriate to have different versions of a curriculum for younger and older students, although this may present challenges for

alternative school settings in which students from multiple grade levels may share the same classroom.

Youth Recommendations for Prevention

A second theme is titled, Youth Recommendations for Prevention. This theme contains several subthemes pertaining to characteristics of prevention programs that would be effective for the participants and their peers. This theme is important for understanding the types of adaptations that might make a curriculum such as Keepin' it REAL more effective for older students. The subthemes include: Realistic Consequences, Realistic Experiences with Drugs, Testimonials, Scare Tactics, and Debates within the Group about Providing Information. Some of the subthemes reflect a struggle between wanting to provide accurate information while trying to prevent problems resulting from substance use.

Realistic Consequences

Students discussed consequences for substance use that are realistic or meaningful for their peers and may help to prevent substance use. These consequences included getting caught, side effects, and harming others while under the influence. These are illustrated in the following statements:

> Female: Plus it will prepare them for what is going to happen if they do start using, they won't be like freaked out, show them the side effects, the real side effects, not the 'Oh you're going to lose your brain, you're going to be retarded, don't smoke weed. No, be like, okay this is probably what is going to happen. You know, just give the negatives but also prepare them. (Disciplinary School 1)

> Female: I guess we don't really think about what is going on, our health, whatever, that doesn't really phase us, the thing that gets to us is if you get caught. Stuff happens all the time and you're always in a situation where

> you're like, could I get caught? Oh well, you put it in the back of your head. (Disciplinary School 1)
>
> Female: Add in the curriculum not only how it affects your body but what you could do to other people while you're on those drugs. I had some friends who were really messed up and these guys came by who were trying to mess with them and it turns into them beating each other up and one gets stabbed and gets killed and they didn't even – I remember the last thing that guy said was 'I hope I didn't stab him in the heart'. And, he was on drugs, and I don't think-I know them personally-I don't think any of that would have happened without the drugs they were on. (School of Choice 1)
>
> Female: Do another video showing the bad effects but also how normal people react and showing lifelong physical effects, mental effects, saying this drug is around and you can do it but is it worth risking it all for this? Is it worth popping one Ecstasy and your body can't handle it so it starts shutting down because your heart's beating faster or too many Xanax so you forget what you're doing and you keep going and your body shuts down. You can try it, it's there, a lot of people do it, but is it worth it? (School of Choice 1)

These ideas came from female students. A male student had an idea that represented an anomaly in that he felt that the way to change behavior is to experience a bad outcome yourself.

> Male: Kids just need a reminder and something bad should happen to them, just so they can see how bad the world really is. They need a bad experience to make everything good….When that happens, that can turn people's lives around and put them on the right track. (Disciplinary School 1)

Rather than learning about realistic consequences and witnessing bad outcomes, this student feels that experiencing a bad outcome changes behavior.

Realistic Experiences with Drugs

Students also emphasized the need to portray substance use as it occurs for high school students, including the types of substances that should be discussed

and portraying that typical high school students use substances. Two female students highlight these ideas:

> Female: So I think that the fact that times are changing and this is really geared for high-schoolers that you should really get in to the hard drugs like cocaine, heroin, meth. (School of Choice 1)

> Female: Yea, because all of these people here were like, I would never try it because of this and this and this and that's totally fake, there's one point where you do think that, you're like I'm not going to get into all of this but then when it comes down to real life, it's like yeah. (Disciplinary School 1)

Even though a small percentage of the sample reported using the "hard drugs" that the first student described, the idea that high school students use these substances was expressed several times in the focus groups. Students wanted to discuss problems associated with these substances rather than focusing on marijuana, which they did not perceive as harmful. The second student feels that showing her peers refusing substances outright is not realistic because many of the students were placed in the alternative school for drug related offenses. She believes that, before they enter high school, students may think that they will not use substances, but that they typically do at some point.

This subtheme, again, emphasizes the idea that it is normative for adolescents to experiment with substances. For this reason, prevention programs for this audience need to demonstrate that students use substances and they have experimented with a range of substances rather than just alcohol and marijuana.

Testimonials

Several students commented on the use of testimonials as an effective tool for encouraging high school students to reconsider substance use. Testimonials

are defined as peers' descriptions of their real experiences with substances. This is consistent with statements in other themes that criticize the videos for portraying unrealistic substance use scenarios. Under the theme, Keepin' it REAL: "Are you Kidding Me?", the one video that received positive feedback showed peers talking about their own experiences with substances. These students said these types of testimonials have potential to change their behavior.

> Male: What I would do is instead of using the scenarios, show someone who is homeless or high school dropouts and just show the long-term effects of drug use and what it can do to your life. A scenario isn't enough to compel me not to do something or to avoid the scenario. (School of Choice 1)
>
> Male: Yeah, I think it should be real stories and people who have changed already who went through something real, real bad. (Disciplinary School 1)
>
> Female: Yeah – I think that interviewing homeless people that dropped out of high school and showing the long term effect that drugs had on their life because all of the drugs you take might not necessarily kill you but they might ruin your life if you continue to do a hard core drug you're just going to want to drop everything else and keep doing it because a lot of the drugs are very addictive. (School of Choice 1)

These statements indicate that hearing about someone's actual negative experiences resulting from substance use is more powerful that viewing a scenario that portrays resistance strategies. The female student again emphasizes the idea that portraying realistic consequences is important. A substance may not kill you, but, through testimonials, you can learn about the real long-term consequences that are meaningful, such as dropping out of high school or becoming homeless.

This subtheme and the previous subtheme, *Realistic Experiences with Drugs,* suggest the importance of using harm reduction models with this population. Youth who have experimented with substances know from

experience that substance use is usually not deadly (MacMaster et al., 2005). In fact, youth often experience many positive effects of substance use, such as improved concentration or stress relief (Newcomb et al., 1988). For them, a curriculum that suggests that substance use will result in severe, negative consequences is not realistic. As the above statements illustrate, however, there are consequences that are meaningful in preventing substance use for this group. Hearing others talk about the real consequences of their substance use, such as dropping out of school or becoming addicted and requiring rehabilitation are consequences that they feel would have an impact on their peers.

Scare Tactics

Some students expressed the idea that the consequences should be realistic but also scary in order to change behavior. Others disagreed.

> Female: If you were to show me what it's like to get caught, I think it would be more scary that way. (Disciplinary School 1)
>
> Male: Yeah, someone in rehab telling their stories and you record them so they can see what it actually does to you…because people would realize that's what it does to your system. It would scare them and they won't do it. (School of Choice 2)
>
> Female: Is it fair to say that scare tactics usually don't help?
> Female: They don't work at all.
> Female: From what I've heard, a lot of them when they start to think about how it's affecting the things they care about, that's when they start thinking about their drug use, is that fair? (School of Choice 1)

These statements represent differing ideas about whether consequences that are scary to youth are helpful for prevention. The statements illustrate two different perspectives about scare tactics. Two of the students feel it is important to relate consequences that are scary. For this group, those consequences include

getting caught and hearing individuals tell their real stories about needing rehabilitation services for their addiction. For the third group of students, scaring students is not an effective strategy. They feel it is more important to discuss how substance use can affect things in their daily lives that are personally important to them.

Debates about Providing Information

This subtheme also illustrates differing ideas within the groups about the amount of information that should be provided in a prevention program.

> Male: Show them the bad sides. Show them the good side. Show them both sides.
> Male: I don't think you should show them the good side, because if your show them the good side, that's going to make them want that. They're going to want the weed, they're going to show up to class and they aren't going to learn. (Disciplinary School 1)

> Female: I think that you should talk about every drug but you have to be careful not to educate these kids too much about what every single drug is.
> Female: But they need to know that.
> Female: But they're going to find out anyway. Make it informative but not like "Okay, now I know everything!"
> Female: They need to know.
> Female: Yeah, they need to know.
> Female: Only to a certain extent. They don't need to know how to make it. (School of Choice 1)

> Female: Yeah. [Tell them] I've done these drugs, and I'm still here, and I'm damn lucky.
> Male: You can't do that because then somebody is going to go and do drugs.
> Female: We have free will and we can only put the message out there. We can't do anything to make people. (School of Choice 1)

These statements indicate differing opinions among students about the level of information that should be provided in a prevention program. The dialogue, in many ways, contradicts the views expressed throughout the focus

groups that realistic portrayals of substance use are the most useful for prevention. Instead, these students are wrestling with wanting to provide accurate education about substances while not wanting to encourage use. This is important because students have many reasons for choosing to use substances, including increased energy levels, reduced feelings of stress, and enjoyment of feeling high (MacMaster et al., 2005; Newcomb et al., 1988). Statements in this theme suggest that prevention programs should provide a realistic picture of substance use without emphasizing every positive reason for using substances.

"Too Late" for Prevention

The students made statements during the focus group indicating that they felt prevention was inappropriate for them and their peers. The primary reason for stating that it is too late to do prevention is current use of substances.

> Male: Nah, we're messed up already.
> Female: It's been going on for years. We're already screwed up. (Disciplinary School 1)

> Male: The reason why is that once you're in high school it's too late to be educated about it because it's already everywhere–you already know how to do all of that. In middle school, you can still get molded into going one way or the other. That way when they get to high school, they'll know what to do and how to handle it, other that us just reading the materials and being like "are you kidding me. Is this a joke?" (School of Choice 1)

> Female: One question. Why would you choose to put a 'say no to drugs' thing at a place where all the people are on drugs already. It's like, we're already into it, why would you want to promote not even starting if we've already started. (Disciplinary School 1)

In addition to re-emphasizing that the curriculum is not well suited for older students who are already using substances, these students suggest that any prevention program might be inappropriate for their peers. It is also clear from the

third student's statement that she perceives the Keepin' it REAL curriculum to be abstinence-focused, even though the adaptation was intended to allow students to portray a less abstinence-focused message when students felt this was appropriate. The statements below highlight why prevention programs may be inappropriate. Not only are their peers using drugs; they also like using drugs.

> Female: When you're in middle school, you haven't gone to high school yet, you don't know what is about to come whereas when you've already been in high school you've already been around it. We've all tried it before, so reading about avoiding it and everything, I know how to avoid it, I just don't want to. (School of Choice 1)

> Male: You can't tell somebody, 'Stop smoking and doing drugs'…because they like it. (School of Choice 1)

These statements again emphasize that these students and their peers typically use substances and enjoy them, often without serious consequences. This idea has surfaced in several of the themes and presents a challenge for prevention. These students already know that they enjoy using drugs and that using drugs has not had life-threatening consequences for them. Again, this theme suggests the importance of using harm reduction messages in prevention for this population. Even if a prevention program is unlikely to prevent future substance use, it could help to prevent some of the negative consequences of use that are life threatening, such as drunk driving and transmission of HIV/AIDS, by educating adolescents about ways they can keep themselves safe even when they are using drugs (MacMaster et al., 2005).

Drugs as Dangerous or Not

Students' statements provide insight into whether they perceive substances as dangerous. These statements from male students reflect a perception that some

substances are safe. The second example reflects a difference of opinion among students about mushrooms.

> Male: Weed has no bad side effects. Any other drugs, yeah, except beer. (Disciplinary School 1)

> Female: Honestly, stressing mushrooms, or any natural hallucinogen, is just ridiculous.
> Female: But no, but these can be very dangerous because it depends on the person because it can go totally wrong and you can just freak out.
> Female: I think it's not as important as the drugs that can kill you the first time you use it. (School of Choice 1)

In contrast, the students consistently perceived other substances as potentially harmful.

> Female: So I think that the fact that times are changing and this is really geared for high-schoolers that you should really get in to the hard drugs like cocaine, heroin, meth.
> Male: The drugs that actually kill.
> Female: The drugs that kids are doing, especially focusing on the amphetamines.
> Male: Pharmaceuticals.
> Female: Pharmaceuticals. (School of Choice 1)

> Female: We didn't hear a lot about Ecstasy, and I'd like a lot more on that because you'd be surprised about how many people use Ecstasy and are actually addicted to Ecstasy. (School of Choice 1)

These statements reflect a perception that pharmaceuticals, cocaine, heroine, methamphetamines, and Ecstasy are dangerous because they can either kill or cause addiction. This information is important for future prevention efforts because of the link between perceptions that a behavior is dangerous and engaging in that behavior. Research indicates that when a behavior is perceived as risky, individuals are less likely to engage in the behavior (Klein, Elifson, & Sterk, 2003; Lucas & Gillham, 1995; Novak, Reardon, & Buka, 2002; Szalay, Inn, Strohl, & Wilson, 1993). It may be more difficult to reduce the use of

marijuana than pharmaceuticals or Ecstasy. This may help to explain the lack of change in marijuana use while alcohol use decreased among those receiving the curriculum. There were too few students who reported use of the substances defined here as dangerous to include these substances in the analysis. However, future research should examine whether a curriculum can be successful in changing attitudes about and use of these substances.

Peer Pressure

According to the participating students, peer pressure is subtle, if it exists at all. All of these statements came from students at the same disciplinary alternative school and may not be representative of students' perceptions at other schools.

> Male: In the real world people don't force you to smoke, it's either, you want a hit or you want some of this and No, that's it. (Disciplinary School 1)

> Female: They may not want to smoke and they may just stay around everybody that's smoking, their friends and whatnot, and they just say, well, why don't you hit this, and they're like, well…(Disciplinary School 1)

> Female: It's not other people pressuring you, it's you pressuring yourself. (Disciplinary School 1)

The statements above reflect a sentiment that peers to not actively pressure others to use substances. The pressure comes more from oneself and a desire to fit in by joining a group engaged in substance use. The statements below reflect an attitude that peer pressure is non-existent.

> Female: Yeah, they said you have to give them an explanation if you don't want to do it. If you say no, they're happier because they get more.
> Male: They're like more for me. (Disciplinary School 1)

> Female: There is no such thing as peer pressure because if you want to do something, you're going to do it. (Disciplinary School 1)
>
> Male: Like, when they ask me, alright do you want a drink of beer, sometimes I'm in the mood, sometimes I'm not. Or, if they know the person doesn't smoke, don't ask him, you already know (Disciplinary School 1)

The first statement suggests that those offering substances would not pressure someone to accept a drug offer because they would rather have more for themselves. The last statement reflects a sentiment that was also expressed in one of the videos that the students made at an alternative high school of choice. When a student establishes peers that he or she does not use substances, the peers stop making offers.

Knowing the Good and Bad Sides and Using Safely

A theme that seemed to emerge frequently in focus groups at different locations involves providing information about the real reasons people use substances as well as reasons for not using substances.

> Male: Show them the bad sides. Show them the good side. Show them both sides. (Disciplinary School 1)
>
> Female: If you want to do something that shows both sides of a hallucinogen, first show people sitting around talking about how tripping on mushrooms can be awesome and them talk about that party where that kid flipped out and stabbed people. (School of Choice 1)
>
> Male: I think I would take all of the drugs and on one side of the chart or on a video or something, have the drugs with the good effects and the bad ones, and show how the bad ones are outweighing the good, so they're not worth doing – if you want to educate people. (School of Choice 1)

Many students also emphasized the importance of acknowledging that some students use drugs and have no bad consequences while others suffer.

> Female: Yeah, it's reality. If you say that everyone who tries cocaine is going to become a hard-core coke head, people will be like "You're so full of crap. Let me prove you wrong" (School of Choice 1)

> Female: I think you just need to show, yea acid's great and all but you can have – 'cause one trip can really screw you up. One time really can screw you up. I think you need to show that there are some people who can go their whole lives using different kinds of drugs and come out okay. All the kids in this room – a lot of us have done some really hard drugs and we're fine. (School of Choice 1)

Another idea expressed within this theme has to do with discussing substance use as complex and understanding that use under some conditions is safer than others.

> Female: Instead of just telling them to always say no, try giving them a choice we would actually be given, say if you really want to do this, give them ways to make it safer, you know. (Disciplinary School 1)

> Female: You're always saying don't drink, don't smoke, don't do this, but has it worked ever? It seems like-just try being like, when you do do it, don't overload, know your limit, you know. (Disciplinary School 1)

> Female: Especially if you're going to show these [here] where a lot of the people are here for weed and drinking and all the drugs. It's like, 'Okay, don't do that anymore, naughty children.' Do it, just don't be stupid about it. We're already here for that kind of stuff. (Disciplinary School 1)

All of these statements are consistent with the idea that the participants view use of some substances under certain conditions as acceptable. At the same time, they emphasize that use under other conditions is harmful. This idea is, again, consistent with the harm reduction approaches to reducing substance use (MacMaster et al., 2005). Using a harm reduction strategy poses many challenges for substance abuse prevention, especially in settings such as schools because, politically, it is risky for a school to appear to be condoning any kind of substance use. Since it is illegal to use drugs and illegal to drink alcohol under the age of 21,

a school implementing harm reduction models could be perceived as condoning illegal activities.

The commonly expressed attitude that a prevention program should portray the good and bad sides of substance use and promote some use as safe and some as dangerous may help to explain why this sample felt that the curriculum was inappropriate for them. They felt that the curriculum assumed that they were not using when, in their minds, it is obvious that they use drugs and alcohol. These ideas are important for ensuring that a curriculum is culturally grounded for the participants because a culturally grounded curriculum must reflect the actual experiences of participants (Castro, Barrera, & Martinez, 2004). Youth are likely to feel that a curriculum that assumes substance use is abnormal and always dangerous does not reflect their life experiences. They are, therefore, unlikely to benefit from such a curriculum (MacMaster et al., 2005). The adapted materials attempted to circumvent this problem in some cases by having students acknowledge that, even if you use substances, there are some substances and some contexts in which you would choose not to use. No adapted materials, however, went so far as these students advocate by discussing how to use substances safely.

Reliability and Validity of Qualitative Data

Reliability and validity are conceptualized differently in qualitative versus quantitative research. Because qualitative research is concerned with providing depth of understanding and illustrating anomalies in perspectives, reliability, which is defined as consistency in quantitative measurement, is often described as

irrelevant for qualitative research (Golafshani, 2003). Instead of providing understandings of behavior that can be generalized to a larger population, qualitative researchers are more concerned with thoroughly understanding a smaller, idiosyncratic group (Rubin & Babbie, 2005). However, qualitative researchers must demonstrate that their interpretations of the data have merit and depict the perceptions of the target group as accurately as possible (Creswell, 1998; Franklin & Ballan, 2001). Qualitative procedures should include means of evaluating whether other researchers would be likely to come to the same conclusions about the data. In addition, the procedures should verify that the interpretations accurately reflect the views of the participants. As described in Chapter 3, this study employed three means of establishing reliability (examining participant responses across different forms of the same question, cross checking interpretations of the data, and applying a consistent analytic method) and five means of establishing validity (prolonged engagement, purposive sampling, triangulation, peer debriefing, and negative case analysis). These procedures are described in Chapter 2. However, the data provides interesting illustrations of triangulation and negative case analysis that are described below.

Triangulation

Triangulation is the process of using multiple data sources to verify findings (Creswell, 1998; Franklin & Ballan, 2001). By including both quantitative and qualitative methods to explore the curriculum's impact on substance use and youth attitudes, the researcher can explore the validity of both data sources. In this study, the quantitative data and qualitative data point in the

same direction with respect to answering two questions: whether the curriculum was appropriate for the participants and whether the curriculum was effective in changing patterns of use. The qualitative data strongly emphasized that the curriculum was best for younger students, and the quantitative data reflected positive outcomes for students under 17 and no affect for students age 17 and over. In addition, the participants indicated in the focus groups that the curriculum materials were not sufficient to influence their substance use and that marijuana is not a substance that they consider to be dangerous. The quantitative findings also support these results because the curriculum had no significant effect on marijuana use.

Perhaps the most important trend in the qualitative data is the perception that the Keepin' it REAL materials did not depict realistic substance use scenarios for this population. Even though students at each school created videos and workbook scenarios for the curriculum, the participants felt that they did not accurately portray that substance use is considered normal among their peers and that they do not consider marijuana to be a dangerous substance. This indicates that the curriculum is not adequately grounded in the culture and experiences of this group in spite of the fact that students created many of the materials themselves. This provides a possible explanation for the limited effectiveness of the curriculum suggested by the quantitative findings.

Negative Case Analysis

Negative case analysis involves looking for examples in the data that disconfirm hypotheses or themes that the researcher has defined (Creswell, 1998).

In an attempt to further establish the trustworthiness of the data, the researchers looked for anomalies, or instances in which the statements diverged from the main themes. There were a few occurrences of anomalies and disagreements between participants about important issues that were reported in the qualitative analysis section. For example, students disagreed about whether prevention programs should provide detailed information about substances and substance use or whether they should emphasize the negative consequences over the benefits of substance use. There was also some disagreement about whether describing the "scary" consequences of substance use is helpful in prevention programs and whether some drugs, such as mushrooms, were considered dangerous.

CHAPTER V: DISCUSSION

Summary of Findings

The purpose of this study was to evaluate the effectiveness of adapted versions of the Keepin' it REAL curriculum. The adaptation was intended to make the curriculum more culturally grounded for participants through scenarios that they created using their own experiences. The data present mixed messages about the effectiveness of the curriculum. Although the results from the focus group indicate that students felt the curriculum was not very helpful for them or their peers, the quantitative findings indicate that the intervention may have influenced the attitudes and behaviors of the younger students with respect to alcohol use. This finding must be interpreted with caution, however, due to the many potential threats to internal validity and focus group feedback.

The first hypothesis examined whether the experimental group and comparison group would differ over time in their intentions to accept alcohol. This hypothesis was supported due to the significant group by time interaction on this variable. There was a significant difference between groups over time both at posttest and follow-up. The effect was not significant for the analysis that included the larger group of students who completed pretest and posttest measures before attrition. This suggests that the students who completed the follow-up measures are different from the students who dropped out of the study. When the analysis was conducted separately for younger and older students, the effect remained significant for the younger students but was not significant for the older students, suggesting that the intervention was more beneficial for the younger students.

The focus group data suggest students did not find the curriculum helpful in preventing substance use for their age group. They indicated that the curriculum did not reflect their life experiences and would be better for younger students who had not yet initiated use. Even though the students did not perceive an effect of the intervention, it is possible that it changed the attitudes of the younger students somewhat. This would be consistent with the idea that the curriculum is more helpful for younger students.

The second hypothesis examined whether students in the experimental group and comparison groups differed in their intentions to accept marijuana over time. There was no significant difference, suggesting that the intervention did not have an effect on this variable. The focus group data helps to explain why groups did not change on this variable. Students indicated that they did not perceive marijuana to be a dangerous substance. Although some expressed that it would be helpful to curtail use of "drugs that kill", such as cocaine and pharmaceuticals, they did not seem to feel that marijuana use warranted the same attention. It is also possible that the intervention did result in reduced intentions to accept marijuana but the compromised power of the MANOVA due to small sample size and violation of some assumptions meant that the effect was not significant. The change in means over time indicates that the experimental group was less likely to say they would accept an offer of marijuana, whereas the comparison group scores indicate that they were slightly more likely to accept an offer.

The third hypothesis predicted that students in the experimental group would report reduced alcohol use after participation in the curriculum when compared with the comparison group. This hypothesis was supported at follow up, with the experimental group demonstrating significantly less alcohol use over time than the comparison group.

This effect was not significant at posttest and was also not significant for the larger sample that completed pretest and posttest questionnaires before attrition. Because the measure for alcohol use asks students to report their use over the past 30 days, the measure may not have been sensitive enough to detect differences at posttest. The curriculum lasted approximately six weeks and the 30-day period prior to posttest, therefore, began after approximately two weeks of participation. In contrast, the follow-up measure occurred a full six weeks after completing the curriculum, and any effects the curriculum had on alcohol use would be more evident in the follow-up measures. As with the variable measuring intentions to accept alcohol, the different age groups demonstrated different patterns of change on alcohol use. Younger students reported significant decreases in alcohol use. For the older students, this effect was not significant.

The focus group data do not suggest that the curriculum would reduce alcohol use for this population. Alcohol was described as less serious than substances other than marijuana. The students did indicate that the curriculum would be better for younger students, which may explain the age differences in alcohol use.

The fourth hypothesis predicted that students in the experimental group would report reduced marijuana use after participation in the curriculum compared with the comparison group. This hypothesis was not supported as the effect was not significant either for the sample that completed follow up or the full sample prior to attrition at posttest. As with the variable, Intentions to Accept Marijuana, it is possible that the intervention had a beneficial effect on marijuana use but the analysis was not powerful enough to detect this difference given the small sample size and violations of assumptions. The trends over time indicate a decrease in marijuana use for the

comparison group and a slight decrease at posttest and increase at follow-up for the comparison group. Without further research that examines this effect with a larger sample, it is not possible to know whether this effect would be significant if the analysis had adequate power.

The focus group data are consistent with the quantitative findings in that the students said that marijuana was not a dangerous substance and that portraying marijuana as dangerous is not consistent with their views or life experiences. In order to make this curriculum more culturally grounded for this population, it would need to emphasize substances that they consider to be harmful, such as heroin, cocaine, and pharmaceuticals.

Limitations of the Research

Although the findings lend some support for the effectiveness of the intervention, the results of the quantitative analysis should be interpreted with caution for many reasons. The threats to internal validity provided below illustrate that there are possible explanations for the quantitative findings other than the impact of the intervention. It is possible that the groups were not equivalent, for example, or that the students who remained in the study were the ones who were improving with respect to the dependent variables, and the students who were not helped by the intervention dropped out of the study.

Sample Size and Attrition

A total number of 107 students completed pretest measures, but the sample size of those completing pretest and posttest measures was only 70 students, resulting in a rate of attrition of almost 35% between pretest and posttest. Twenty-nine students dropped out of the study prior to follow-up, resulting in a rate of attrition of approximately 41%

between posttest and follow-up. A remaining sample size is too small to achieve adequate power for a MANOVA with two groups, four dependent variables, and a control variable. The high rate of attrition probably results from the fact that the population is more transient that a traditional school population. In addition, one school moved students between classrooms, resulting in experimental group students being placed in the comparison group classroom and visa versa. These students had to be dropped from the study. Another reason for attrition was the need to complete questionnaires by mail. Questionnaires had to be mailed to students because they had left the alternative school and returned to their home school, they had dropped out of the program, and the school year ended prior to the six-week follow-up. Fifteen of the twenty-nine students who did not complete mailed follow-up measures did not ever receive them. The questionnaires for these students were returned with a stamp indicating that they were not longer at the listed address.

Because the patterns of significance are somewhat different at posttest for the entire sample and those who completed the follow-up measures, it is possible that the group of students who dropped out of the study differ from those who completed follow-up measures in some important ways. The group that completed follow-up measures demonstrated that the students in the experimental group were less likely than the comparison group to accept an offer of alcohol at posttest. This effect was not significant for the entire group prior to attrition. It is, therefore, possible that the group that dropped out of the study represents students who are higher risk and, therefore, less likely to improve on this measure over time. In other words, the students who dropped out of the study were less likely to be helped by the intervention for some reason.

Lack of Random Assignment to Treatment Conditions

Random assignment was not possible at the participating schools. The principals and staff required that the groups for the study be selected from pre-existing groups, such as pre-existing classrooms. Although the researchers emphasized the importance of working with classrooms that are as similar as possible in demographics and drug and alcohol use, the groups were significantly different in age, intentions to accept alcohol, and alcohol use.

Differences between Experimental and Comparison Conditions

Because students were not assigned randomly to conditions, it is not surprising that there were some differences between experimental and comparison conditions. The groups differed significantly in age, intentions to accept alcohol, and alcohol use. The group differences at pretest make it difficult to determine whether differences in trends over time are due to the intervention or due to pre-existing differences in the groups.

Differences in Implementation

Because each school is structured differently, there were differences in curriculum implementation. In two of the schools, the principal wanted the curriculum delivered in classrooms. In another school, the students worked at their own pace and changed classrooms as soon as they had completed the work for a particular subject. This meant that the students within a given classroom changed regularly. In this school, the curriculum was delivered in a group that met once weekly. In the fourth school, the curriculum was delivered in a problem-solving skills group because the principal felt that the material was consistent with the goals of this group.

There were also differences in the ways that the comparison group was selected at each school. In one school, the principal would only allow one classroom to participate and allowed the comparison group to be selected from students during their lunch period. In another school, the students in the experimental group met in a weekly group. No similar group was available to use as a comparison group, so the principal allowed students in a classroom to complete the measures as a comparison condition.

The schedule for the delivery of the curriculum varied slightly at each school. In the two disciplinary alternative schools, the curriculum was offered for 20 to 30 minutes several times per week. At the two alternative schools of choice, the curriculum was delivered in one 90 minute session per week. Although the students received the same amount of material per week, there may be differences in the effectiveness of implementing a session in one time block and implementing it in several shorter time segments.

Fidelity

Facilitators followed the curriculum with various degrees of fidelity. At the two alternative schools of choice and one of the disciplinary schools, the facilitators reported following the curriculum closely and random site visit observations revealed that the groups covered curriculum content closely for that session. In the fourth school, the facilitator said that he could not use the role play exercises and group activities that accompanied the curriculum but that he followed the curriculum other than these activities. His reason for omitting these activities was a policy at the school that the students not interact with each other to avoid outbursts and physical conflict on the school grounds. These activities are important for the skill building components of the

curriculum, and removing them compromised fidelity. During site visits to this classroom, the facilitator followed the curriculum closely, however.

Measures

The measures used for the study had some limitations with respect to reliability and validity. The measures were adapted from measures used for other studies and, therefore, the psychometric properties had not been assessed for these variables as they were used in this study. In addition, some of the original measures from which the measures for this study were adapted have limited psychometric data available for review. Items adapted from the Texas School Survey of Substance Use were used to measure alcohol and marijuana use. Although these measures have been used repeatedly for nine years with Texas students, reliability and validity analyses have not been conducted on the survey in recent years. When possible, reliability and validity were evaluated for the measures as they were used in this study. Test-retest reliabilities were strong for all of the variables in this study, and internal consistency reliability and factorial validity were strong for the summed scales. However, the measures need to be evaluated further to establish confidence in their ability to measure the constructs they were intended to measure.

Implications for Practice

The results of this study suggest that an adaptation of Keepin' it REAL may have some benefits for younger high school students (under age 17). If a replication of this study with a larger sample and stronger design also found decreases in alcohol use and intentions to accept alcohol, the adapted Keepin' it REAL curriculum could be very

helpful for practitioners in alternative schools whose students need substance abuse prevention.

The focus group data has strong implications for reducing substance use and its associated risks for this population. The focus group participants supported the idea that curricula need to be culturally grounded to the extent that they reflect the real life experiences of the youth. This idea is also strongly supported in the literature on culturally grounded prevention (Castro, Barrera, & Martinez, 2004; Castro & Hernandez-Alarcon, 2002; Gosin, Marsiglia, & Hecht, 2003). The students strongly emphasized the importance of realistic portrayals of substance use, including a recognition that substance use among teens is prevalent and normal. It is also important to discuss substances other than marijuana, because they do not perceive this substance to be as harmful as cocaine, heroin, and other substances. Practitioners wishing to provide culturally grounded prevention for alternative high school students may need to first learn which substances they consider to be harmful and incorporate those substances into group discussions.

Recognizing that substance use is common and, to some extent, normal among adolescents presents many challenges for school practitioners who cannot be perceived as condoning substance use among students. Students in this study indicated that their life experiences do not resonate with an abstinence-based focus in substance abuse prevention, however. Schools may need to strike a balance between acknowledging that many adolescents use substances and emphasizing the consequences of substance use that the students perceive as meaningful. In this study, for example, students felt that learning about actual negative experiences resulting from substance use would have an impact on their attitudes and behaviors. Specifically, they wanted to hear the stories of people who

had been through rehabilitation for substance abuse or who had dropped out of high school. School practitioners could potentially integrate this experience into a prevention program without normalizing substance use.

Another important factor to consider for practitioners conducting substance abuse prevention is the age of the participating students. In this study, both the quantitative and qualitative data support the idea that the prevention needs of older adolescents are different from those of younger adolescents. This idea is also supported by research on age differences in substance abuse and prevention outcomes (Bonomo & Bowes, 2001; Johnston, O'Malley, Bachman, & Shulenberg, 2005; National Institute on Drug Abuse, 2004; Newcomb, Chou, Bentler, & Huba, 1988). For this study, the students indicated that older students would benefit from a discussion of substances other than marijuana and alcohol and from harm reduction models of prevention. Again, it would be difficult for a practitioner to provide harm reduction prevention to students, but practitioners could ensure that they include discussion of substances that the students perceive as harmful.

Implications for Future Research

Future research should evaluate the effectiveness of adapted curricula with a larger sample and stronger design. For example, a design in which participants are randomly selected and assigned to treatment conditions, a significant difference between groups would be less likely to appear at pretest. This would give the researcher more confidence that the significant effects are due to the intervention rather than preexisting group differences in age or alcohol use at pretest.

It would also be helpful to employ more methods to prevent attrition. Because students who dropped out of this study are likely different from those who completed

follow-up measures, it is important to know whether the curriculum is effective with a representative group of alternative school students who complete follow-up measures. Further study is needed to understand the characteristics of the students who do not continue participation and whether the curriculum could be more helpful for them.

The lack of evidence-based curricula implemented in schools settings suggests a need for culturally grounded prevention programs. Students are more likely to benefit from curricula that reflect their culture and life experiences (Castro, Barrera, & Martinez, 2004; Gosin, Marsiglia, & Hecht, 2003). Practitioners are more likely to use a curriculum that they believe reflects the culture of their students (Botvin, 2004). Adapting evidence-based curricula to make them more culturally appropriate for ethnic minority youth or high risk youth presents a promising option for increasing the number of culturally appropriate programs that are effective in reducing substance use and its negative consequences (Castro, Barrera, & Martinez, 2004). Culturally grounded adaptations can also improve recruitment and retention for prevention programs (Kumpfer, Alvarado, Smith, & Bellamy, 2002).

In addition to lacking curricula that are culturally grounded for participants, there are few school-based prevention programs that have been developed for older high school youth (Sussman, Dent, & Stacy, 2002) or youth attending alternative schools (Sussman, Sun, McCuller, & Dent, 2003). The majority of existing curricula were designed for junior high school students or younger. Of the 66 programs designated as SAMHSA Model Programs, only seven target reducing substance use among adolescents older than 17 (SAMHSA, n. d.). For this reason, it is important to understand whether existing evidence-based curricula can be adapted to meet the needs of older students and students

attending alternative school settings. The target population for Keepin' it REAL is youth between the ages of 10 and 17. The adaptations of Keepin' it REAL created during an earlier phase of this research project attempted to create versions of the curriculum that would be appropriate for students between the ages of 14 and 19 attending alternative schools.

Based on feedback from the student focus groups, the adaptation was not successful in creating a curriculum that is culturally grounded for this population. Students felt that the curriculum would be more appropriate for younger students who had not yet initiated use. Students also indicated that the curriculum needed to focus more on substances other than marijuana and alcohol. Materials needed to portray the prevalence of substance use for adolescents as well as the understanding that experimentation with substances is normal. This may indicate that the adaptation procedures were insufficient to reflect students' values and life experiences. Students may need more encouragement to create scenarios and videos that illustrate their actual experiences with substances. Adaptation procedures may need to also encourage the use of testimonials rather than scenarios or skits depicting substance use, since students indicated that testimonials would be more likely to engage them and change their attitudes.

Another possible explanation for the negative responses to the curriculum is that the adaptation was too ambitious in trying to make the curriculum culturally grounded for students who are both older and using more heavily that students for whom the original curriculum was created. Future research needs to explore parameters for adaptation to help explain how much a curriculum can realistically be adapted. Since the core

components of a curriculum must be preserved in order to maintain its' effectiveness, it is possible that a curriculum created for younger adolescents cannot be successfully adapted for older adolescents if the two groups are too different. This is just one of many questions that have yet to be explored in research on adaptation of evidence based practices.

It is also important that future research examine how to adapt curricula in ways that make them culturally grounded without compromising effectiveness. Culturally appropriate adaptations of evidence-based programs may be an effective means of increasing the buy-in from staff and students. Since so few schools are using evidence-based programs to prevent or reduce substance use, a curriculum that is specifically adapted to meet the needs of students in a particular school might be viewed more favorably and have a better chance of being implemented and sustained over time (Castro, Barrera, & Martinez, 2004).

Based on the feedback from students in this study, culturally grounded interventions need to have a harm reduction rather than an abstinence-based focus. This presents a challenge for prevention in schools because, traditionally, school-based substance abuse prevention has emphasized abstinence rather than harm reduction. These approaches have received considerably greater political and financial support than programs that aim to reduce use without encouraging abstinence (Neighbors, Larimer, Lostutter, & Woods, 2006). However, many researchers have advocated for models that aim to reduce risk and build protective factors as more effective approaches to prevention (Hawkins, Catalano, & Arthur, 2002). Many researchers assert that harm reduction models are especially appropriate for adolescents who are at greater risk for substance

abuse because they incorporate realistic goals and better reflect the life experiences of these youth than abstinence-based models (Neighbors et al., 2006; Sussman, Dent, Stacy, & Craig, 1998).

Policies that allow for harm reduction are not mutually exclusive of those that promote abstinence-based models. In fact, harm reduction policies encourage youth to abstain from substance use but also acknowledge that some youth will use drugs and that some patterns of use are more harmful than others (Beyers, Toumbourou, Catalano, Arthur, & Hawkins, 2004). Research conducted by Beyer et al. (2004) suggests that the abstinence-based policies of the United States are associated with higher rates of use of illicit substance such as marijuana whereas harm-reduction policies of Austrailia are associated with higher rates of use of cigarettes and alcohol. An important unanswered question is whether the harm-reduction policies are associated with less harmful patterns of use than the abstinence-based policies (Beyers et al., 2004). Researchers will need to investigate the feasibility of including more harm reduction messages in prevention programs for high risk youth in schools. Perhaps there are ways to integrate abstinence and harm-reduction messages in ways that would be palatable to school administrators, community members, and policy makers, so that we can evaluate the effectiveness of harm reduction messages with this population. Although the first phase of this study provided the opportunity for youth to incorporate harm reduction messages, the adapted curricula did not convey these messages according to the focus group data.

Since the adaptation process requires time and resources from school staff and students, it is important to know whether the benefits of the adapted curriculum outweigh the costs. In order to answer this question, future research examine the following:

1) Whether adaptation of evidence-based curricula is feasible for school settings;

2) Whether the process of creating an adapted curriculum has benefits for students;

3) How to adapt a curriculum to reflect the culture and values of students at a particular school while maintaining the effective components;

4) Whether the adapted curriculum is superior to the original version of the curriculum in effectiveness, participant retention, and sustainability.

This study represents a small step towards answering some of these questions by demonstrating the feasibility of implementing an adapted prevention program and suggesting that some students experienced favorable outcomes. However, the negative feedback about the curriculum indicates that the adaptation was not culturally grounded in the minds of the participants. More research is needed to further answer these questions and establish that the adapted curriculum is superior to the original when the core components are not compromised.

Conclusion

Although the quantitative findings for this study leave some uncertainty about the effectiveness of the adapted versions of Keepin' it REAL, the qualitative and quantitative findings together begin to tell an interesting story about substance abuse prevention with this population. Students strongly emphasize that culturally-relevant curriculum content for them includes using a harm reduction approach to prevention. The abstinence message is more appropriate for younger students. Because many are already using a variety of drugs and have experienced both the positive and negative effects of use, they reject prevention messages that emphasize only the most severe consequences. Instead, they want to hear stories and testimonials that reflect realistic experiences with substance

use. The quantitative data support these views to the extent that program effects were only evident for younger students and had no effect on marijuana use.

These lessons can be applied to future efforts to adapt evidence-based curricula to meet the needs of these students. The message that comes across most strongly emphasizes that curriculum content should illustrate the life experiences of participants. If this is true, adaptation is an important and promising mechanism for making use of the years of research on effective prevention while infusing the curriculum with the participants' values and experiences.

APPENDIX A

Student Workbook Adaptation Procedures

Thank you for your involvement in this exciting and ground-breaking substance abuse prevention project. The goal of this component is to adapt the student workbook which accompanies the "Keepin' It REAL" drug resistance strategies curriculum. It was originally written by and for public school youth in Phoenix, Arizona and the scenarios reflect that context. In order to have the program be relevant for youth here in your setting in Texas, the details (e.g., words, scenarios, prevalent drugs, etc.) should be changed to fit each setting. The most important key to this process is that it **must reflect the experience and context of the youth**. This includes their word choice, style, popular media references, and the like. It is ***critical*** that the involved adult use their skills as "facilitator" (i.e., support, encourage), rather than as a "director" (i.e., boss).

(1) First, here is a general way to explain the task with the youth (please put it in your own words, but this is the essential message):

"You have been selected for the important task of reviewing this drug prevention program and making changes to it to reflect your experience and knowledge about your life and kids like you. You are the expert who will make this program work for (name the agency or setting)."

(2) Next, help the group set some expectations to structure the process, such as follows (to be posted or distributed to the group and signed):
    a. Each member of the group should have an equal opportunity to contribute to the process. [NOTE: Please emphasize this power balance as much as possible to avoid any one group member(s) dominating the process.]
    b. Each participant should be respectful of everyone in the group. While conflict may arise and can actually be a useful part of the process, it is important that everyone feel safe to express their views without criticism, name calling, or aggression.
    c. What is discussed in the group, stays in the group (i.e., confidentiality). Due to the nature of the program, youth may be sharing sensitive and possibly self-incriminating information and therefore should be encouraged to deidentify (i.e., "I know someone who . . .") as opposed to self-identifying wherever appropriate or necessary. Consequences related to the rules at your setting should be shared with the youth. For example, if drug use may result in referral to alternative settings, they should not directly disclose this information in the group. Please distinguish this activity from a therapeutic/support group.
    d. If someone is not fulfilling the expectations listed, the group and facilitator will decide if that person can continue to participate.

(3) Remember, the goal is to come up with materials that MOST reflect the experience and knowledge of **all** of the participating youth in the overall setting.

The youth are welcome to change any material in the workbook, but NO activities can be totally removed from the curriculum. The pages mentioned below should be changed:

p. 2-3 Rewriting scenarios 1-4.

- Read the scenario.
- Extract the main point of the scenario.
- Change the specifics (i.e., relevant characters, common language, setting, style, etc.) while maintaining the main point. Remember, the scenario should capture real events that occur commonly in the lives of your particular group of youth.
- The scenarios can be done by individuals, small groups, or the whole group but the words chosen to appear in the final version of the workbook should be decided upon by the WHOLE YOUTH GROUP.

p. 6-7

- Change the activity example.

p. 8-9 Scenarios 1-5

- Read the scenario.
- Extract the main point of the scenario.
- Change the specifics (i.e., relevant characters, common language, setting, style, etc.) while maintaining the main point. Remember, the scenario should capture real events that occur commonly in the lives of your particular group of youth.
- It is best if the scenarios continue to vary in terms of risk levels/consequences and conflict solutions so that they can be ranked and discussed in the end.

p. 10-11, Parts 2 & 4

- Feel free to change the topics of the sentences.

p. 13 Requests: Feel free to change the requests used for this exercise.

p. 17-21 Scenarios 1-5

- Read the "Avoid" scenarios and think about this strategy.
- Change the specifics (i.e., relevant characters, common language, setting, style, etc.) while maintaining the main point. Remember, the scenario should capture real events that occur commonly in the lives of your particular group of youth.

p. 24 Resistance Role-plays: Scenarios 1 & 2

- Read the role-play scenarios
- Extract the main point of the scenario.
- Change the specifics (i.e., relevant characters, common language, setting, style, etc.) while maintaining the main point. Remember, the scenario should capture real events that occur commonly in the lives of your particular group of youth.

p. 29-30 Scenarios 1-3

- Read the scenarios

- Think about situations that have specific consequences
- Change the scenario specifics (i.e., relevant characters, common language, setting, style, etc.) while maintaining the main point. Remember, the scenario should capture real events that occur commonly in the lives of your particular group of youth.
- If they are clear, list the choices that result from your new scenario [Optional]

APPENDIX B

Video Adaptation Procedures

Thank you for your involvement in this exciting and ground-breaking substance abuse prevention project. The goal of this component is to make videos that accompany the "Keepin' It REAL" drug resistance strategies curriculum. Videos for the original project were created by and for public school youth in Phoenix, Arizona and the scenes reflect that context. In order to have the program be relevant for youth here in your unique setting in Texas, the videos should be created to fit your setting. The most important key to this process is that it **must reflect the experience and context of the youth**. This includes their word choice, dress, music, style, popular media references, and the like. It is ***critical*** that the involved adult use their skills as "facilitator" (i.e., support, encourage), rather than as a "director" (i.e., boss).

(1) First, here is a general way to explain the task with the youth (please put it in your own words, but this is the essential message):

"You have been selected for the important task of making videos for the Keepin' it REAL curriculum to reflect your experience and knowledge about your life and kids like you. You are the expert who will make this program work for (name the agency or setting)."

(2) Next, help the group set some expectations to structure the **process**, such as follows (to be posted or distributed to the group and/or signed):
   a. Each member of the group should have an equal opportunity to contribute to the process. [NOTE: Please emphasize this power balance as much as possible to avoid any single group member(s) dominating the process.]
   b. Each participant should be respectful of everyone in the group. While conflict may arise and can actually be a useful part of the process, it is important that everyone feel safe to express their views without criticism, name calling, or aggression.
   c. What is discussed in the group must stay in the group (i.e., confidentiality). Due to the nature of the program, youth may be sharing sensitive and possibly self-incriminating information and therefore should be encouraged to de-identify (i.e., "I know someone who . . .") as opposed to self-identifying wherever appropriate or necessary. Consequences related to the rules at your setting should be shared with the youth. For example, if drug use may result in referral to alternative settings, they should not directly disclose this information in the group. Please distinguish this activity from a therapeutic/support group.
   d. If someone is not fulfilling the expectations listed, the group and facilitator will decide if that person can continue to participate.

(3) Help the group to structure the content of the videos:

e. Watch the introduction video with the youth to provide basic information about the curriculum and resistance strategies (R.E.A.L.)
f. Provide a brief explanation of each component of the curriculum (Refuse, Explain, Avoid, and Leave -- See section on each strategy)
g. Videos should not show extreme consequences such as injuries or fatalities that result from drug use because such illustrations are not effective due to youth's tendency to assume "this won't happen to me."
h. Scenarios depicted in videos should be events that at least 75% of group members have witnessed or experienced to assure that common scenarios are being captured.

(4) Remember, the goal is to come up with material that MOST reflects the experience and knowledge of **all** of the participating youth in the overall setting.

Video #1: Refuse

- Provide an explanation of this resistance strategy as follows:
  - Refusal strategies that help you to say no in respectful ways that will not embarrass you or the person making a drug offer
  - Nonverbal cues that send a clear but respectful "No" message
  - Use the following steps: Acknowledge the request; clearly and respectfully state your preference; explain the reason for the decision if you wish.
- Ask the group to brainstorm about the content of the scenario (characters, setting, activities, interactions, etc.)
- Have the group create a screenplay to be used for the video. The video should depict a scenario in which the following occurs:
  - A teen wants to be accepted by a group at your setting (this group could be a sports team, a club, an established clique, or a popular activity)
  - There is a scene that shows a group member using a popular drug (cigarettes, alcohol, marijuana, or other popular substance) before the teen joins the group
  - He/she is offered a drug in the presence of group member(s) and refuses (more than one drug offer can be depicted)
  - The video shows some consequence for the group's drug use
- The scenes chosen to appear in the final video should be decided upon by the WHOLE YOUTH GROUP.
- Determine the role that each group member will have in creating the video
- Decide how the video will be cast (i.e. will there be a casting call in which other teens will be allowed to appear in the videos or will just the members be acting?
- Everyone who appears in the video must sign a form stating that their image can appear in the video
- Film the video – editing is optional. The final video should be no longer than 10 minutes in length.

Video #2: Explain

- Provide an explanation of this resistance strategy as follows*:
  - Say what you don't like or don't want to do related to using a substance (such as drugs, alcohol, or cigarettes)
  - Say how it affects you (i.e. how does it make you feel to be around people using a drug or how could the drug affect you?)
  - Say what you want to do or plan to do
- The scenes in this video consist of group members describing experiences in which they explained their reason for refusing an offer of substances, such as alcohol, cigarettes, marijuana or other drugs.
- Ask the group to brainstorm about the substances that should be discussed in the video. The video should address a variety of substances popular among teens in your setting.
- The scenes chosen to appear in the final video should be decided upon by the WHOLE YOUTH GROUP.
- Determine the role that each group member will have in creating the video
- Decide how the video will be cast (i.e. will there be a casting call in which other teens will be allowed to appear in the videos or will just the members be acting?
- Everyone who appears in the video must sign a form stating that their image can appear in the video
- Film the video – editing is optional. The final video should be no longer than 10 minutes in length.

Video #3: Avoid

- Provide an explanation of A-B-C-D Problem Solving strategy for avoiding situations as follows*:
  - A=Ask yourself why you should avoid the situation
  - B=Brainstorm about how you can avoid the situation
  - C=Choose the best solution
  - D=Do it
- The video should depict a scenario in which the following occurs
  - A teen is invited to do something (e.g., go to a party, participate in a group activity, attend an event, etc.) where drugs are likely to be present
  - Show that the teen considers why he/she should avoid this situation, considering the pros and cons of going
  - The teen thinks of ways to avoid the situation
  - The teen chooses one way to avoid the situation and does it.
  - Ask the group to brainstorm about the content of the scenario (characters, setting, activities, interactions, etc.)
- The scenes chosen to appear in the final video should be decided upon by the WHOLE YOUTH GROUP.
- Determine the role that each group member will have in creating the video
- Decide how the video will be cast (i.e. will there be a casting call in which other teens will be allowed to appear in the videos or will just the members be acting?

- Everyone who appears in the video must sign a form stating that their image can appear in the video
- Film the video – editing is optional. The final video should be no longer than 10 minutes in length.

Video #4: Leave

- Provide an explanation of the leave strategy as follows*:
  Leave an undesirable or harmful situation you find yourself in. This is different from the Avoid strategy in which you do not place yourself in a potentially harmful situation in the first place.
- Ask the group to brainstorm about the content of the scenario (characters, setting, activities, interactions, etc.)
- The video should depict a scenario in which the following occurs:
  - A teen finds himself/herself in a situation in which drugs, tobacco, alcohol, or other substance are being offered.
  - The teen leaves the situation instead of accepting the offer.
- Script the scenes – the ones chosen to appear in the final video should be decided upon by the WHOLE YOUTH GROUP.
- Determine the role that each group member will have in creating the video
- Decide how the video will be cast (i.e. will there be a casting call in which other teens will be allowed to appear in the videos or will just the members be acting?
- Everyone who appears in the video must sign a form stating that their image can appear in the video
- Film the video – editing is optional. The final video should be no longer than 10 minutes in length.

APPENDIX C

CONSENT FORM
Adaptation and Evaluation of Drug Resistant Strategies for Adolescents: Phase II

Principal Investigator: Lori Holleran, PhD (512) 232-9330
Co-investigator: Laura Hopson, MSSW (512) 633-1559
The University of Texas at Austin School of Social Work

Your child is invited to participate in a study of drug resistance strategies and videos. My name is Lori Holleran and I am an Assistant Professor at The University of Texas at Austin, School of Social Work. We hope to learn about young people's methods of resisting drugs and alcohol in addition to the effectiveness of drug prevention programs/videos, which have been used in other prevention efforts. Your child was selected as a possible participant in this study because he/she is part of this setting's youth programming. Your child will be one of 500 subjects chosen to participate in this study.

If your child decides to participate and you sign this consent form, your child will be asked to complete a questionnaire about culture and their experience of drug use and prevention. The questionnaires will take about 30 minutes to complete. With a group, your child will also be asked to attend a drug resistance strategies program that will include four drug prevention videos and will practice skills for resisting drug use. The total time required to complete the curriculum is between 6 and 9 hours. Your child will be asked to complete the same questionnaire described above after they complete the curriculum and one month later. The questionnaires will also be mailed to your child 3 months after completing the curriculum and you child will be asked to complete them a final time. Your child will also be given a brief questionnaire about how realistic the videos were, whether the language and characters are believable, and other questions about their effectiveness. We are interested in examining whether there is a relationship between possible substance abuse (if any) and your child's perceptions and responses to this video. Your child will also be asked to participate in a 60-90 minute focus group upon completion of the curriculum to discuss their reactions to the program.

Your child's name will not be written on the questionnaire and any information shared in the group discussions will not be individually identified. I will keep a list of participant names in a locked file cabinet for follow-up purposes, but this list will be destroyed after participants complete the final questionnaire. When the project is finished, the audio-tapes of the discussion groups will be destroyed.

Your child will be given incentives for taking the time to participate in this study. They will be given a $10 gift card each time they complete the questionnaire and a $5 gift card for participating in the focus group discussion. If they complete the questionnaires all four times and the focus group, they will receive a total of $45 in gift cards.

There are no known risks to participation in this study. Every effort will be taken to minimize disruptions of your child's regular activities. However, if your child experiences any discomfort while completing the questionnaire or participating in the

curriculum, he/she may stop participating in the study. Your child may refuse to answer any question or stop participation in the study at any time for any reason. If your child experiences any discomfort while completing the questionnaire, he/she will be able to speak with one of the staff/counselors listed below:

Insert List here (different per setting)

Participation in this study is entirely voluntary. You are free to refuse to allow your child's participation in the study, and your refusal will not influence current or future relationships with The University of Texas at Austin, the participating organization, or any related organization. If you wish to stop your child's participation in this research study for any reason, you should contact: Lori Holleran at (512)232-9330 or Laura Hopson at (512) 633-1559. You are free to withdraw your consent and stop your child's participation in this research study at any time without penalty or loss of benefits for which you may be entitled. Throughout the study, the researchers will notify you of new information that may become available and that might affect your decision to remain in the study. If you decide to allow your child to participate, you or he/she is free to discontinue participation at any time and is under no obligation to participate in the study.

In addition, if you have questions about your rights as a research participant, or if you have complaints, concerns, or questions about the research, please contact Clarke A. Burnham, Ph.D., Chair, The University of Texas at Austin Institutional Review Board for the Protection of Human Subjects, (512) 232-4383 or the Office of Research Compliance and Support at (512) 471-8871.

If in the unlikely event it becomes necessary for the Institutional Review Board to review your research records, then the University of Texas at Austin will protect the confidentiality of those records to the extent permitted by law. Your research records will not be released without your consent unless required by law. The data resulting from your child's participation may be made available to other researchers at the University of Texas at Austin in the future for research purposes not detailed within this consent form. In these cases, the data will contain no identifying information that could associate you or your child with it, or with your child's participation in any study.

The researcher will receive no benefit other than the contribution to the prevention arena via publication of research findings. If the results of this research are published or presented at scientific meetings, your identity will not be disclosed.

You are making a decision whether or not your child can participate. Your signature indicates that you have read the information provided above and have decided to allow your child to participate. You may withdraw at any time after signing this form, should you or your child choose to discontinue participation in this study. You have been informed about this study's purpose, procedures, possible benefits and risks, and you have received a copy of this form. You have been given the opportunity to ask questions before you sign, and you have been told that you can ask other questions at any time. You

voluntarily agree to allow your child to participate in this study. By signing this form, you are not waiving any of your legal rights.

If you have any questions, please ask. If you have any additional questions later, Lori Holleran will be happy to answer them; simply call (512) 232-9330. You are welcome to keep a copy of the cover letter and/or this form if you would like.

_____

Name of Participant Date

_____

Signature of Participant Date

_____

Signature of Parent or Legal Guardian Date

_____

Signature of Investigator Date

I have read the description of the study titled "Adaptation and Evaluation of Drug Resistant Strategies for Adolescents: Phase II" that is printed above, and I understand that I will be asked to do the following in this study:

- Complete a 30-minute questionnaire four times (three times on location and once by mail) about me and my thoughts about drug use/ prevention (your name will not appear on this).
- With a group, attend a drug resistance strategies program that will include watching four drug prevention videos and practicing skills for resisting drug use.
- Fill out a brief questionnaire about how realistic the videos were, whether the language and characteristics are believable, and other questions about their effectiveness.
- Join a 60-90 minute discussion group after completing the curriculum to discuss my reactions to the program.

I have received permission from my parent(s) to participate in the study, and I agree to participate in it. I know that I can quit the study at any time.

_____ _____

Signature of Minor Date

APPENDIX D

DRUG/PREVENTION PERCEPTIONS SURVEY

Location: _____

Today's Date: _____

Circle the answer that best describes you:

Are you a boy: **boy**  **girl** 

Your age: 11 12 13 14 15 16 17 18 19

Circle the First letter of your last name

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Circle the MONTH you were born:

January	**February**	**March**	**April**
May	June	July	August
September	October	November	December

Write in the DAY you were born: _____ (Example: if you were born on April 5, write 5; June 29, write 29)

Are you: (Fill in ALL that apply or write in your ethnicity)

White/Caucasian O Black/African American O
Hispanic/Latino/Mexican/Mexican-American O Asian O
Pacific Islander O Native American/Indian/First Nation O
Other _____

Circle the one that best applies to you.

(1) You were born in Mexico or other country

(2) You were born in the USA; either parent born in Mexico or other country.

(3) You were born in the USA, both parents were born in the USA and all grandparents born in Mexico or another country.

(4) You and your parents were born in the USA and at least one grandparent born in Mexico or other country with the remainder born in the USA.

(5) You and your parents were born in the USA and all grandparents born in the USA.

Did you help with the process of making the student workbook or videos for this project? (Please circle one answer)

Yes

No

Have you ever received treatment for drug use or abuse? (Please circle one answer)

Yes, I am currently receiving treatment.

Yes, I have completed a treatment program.

No

Fill in the bubble that best describes how you feel about each of the statements:	Not at all	Very little or not very often	Moderately	Much or very often	Extremely often or almost always
I speak Spanish	O	O	O	O	O
I speak English	O	O	O	O	O
I enjoy speaking Spanish	O	O	O	O	O
I associate with African Americans	O	O	O	O	O
I associate with Anglos	O	O	O	O	O
I associate with Mexicans and/ or Mexican Americans	O	O	O	O	O
I enjoy listening to Spanish language music	O	O	O	O	O
I enjoy listening to English language music	O	O	O	O	O
I enjoy Spanish language TV	O	O	O	O	O
I enjoy English language TV	O	O	O	O	O
I enjoy English language movies	O	O	O	O	O
I enjoy Spanish language movies	O	O	O	O	O
I enjoy reading (e.g., books) in Spanish	O	O	O	O	O
I enjoy reading (e.g., books) in English	O	O	O	O	O
I write (e.g., letters) in Spanish	O	O	O	O	O
I write (e.g., letters) in English	O	O	O	O	O
My thinking is done in the English language	O	O	O	O	O
My thinking is done in the Spanish language	O	O	O	O	O
My contact with Mexico has been	O	O	O	O	O
My contact with the USA has been	O	O	O	O	O

Fill in the bubble that best describes how you feel about each of the statements:	Not at all	Very little or not very often	Moderately	Much or very often	Extremely often or almost always
My father identifies (or identified) himself as 'Mexicano'	O	O	O	O	O
My mother identifies (or identified) herself as 'Mexicana'	O	O	O	O	O
My friends, while I was growing up, were of African American origin	O	O	O	O	O
My friends, while I was growing up, were of Mexican origin	O	O	O	O	O
My friends, while I was growing up, were of Anglo origin	O	O	O	O	O
My family cooks Mexican foods	O	O	O	O	O
My friends now are of African American origin	O	O	O	O	O
My friends now are of Anglo origin	O	O	O	O	O
My friends now are of Mexican origin	O	O	O	O	O
I like to identify myself as a African American	O	O	O	O	O
I like to identify myself as an Anglo	O	O	O	O	O
I like to identify myself as a Mexican American	O	O	O	O	O
I like to identify myself as an American	O	O	O	O	O
I have difficulty accepting some ideas held by Anglos	O	O	O	O	O
I have difficulty accepting certain attitudes held by Anglos	O	O	O	O	O
I have difficulty accepting some behaviors exhibited by Anglos.	O	O	O	O	O
I have difficulty accepting some values held by Anglos	O	O	O	O	O
I have difficulty accepting certain practices and customs commonly found in some Anglos.	O	O	O	O	O
I have, or think I would have, difficulty accepting Anglos as close personal friends.	O	O	O	O	O
I have difficulty accepting ideas held by some Mexicans and/or Mexican Americans.	O	O	O	O	O

Fill in the bubble that best describes how you feel about each of the statements:	Not at all	Very little or not very often	Moderately	Much or very often	Extremely often or almost always
I have difficulty accepting certain attitudes held by Mexicans and/or Mexican Americans.	O	O	O	O	O
I have difficulty accepting some behaviors exhibited by Mexicans and/or Mexican Americans	O	O	O	O	O
I have difficulty accepting some values held by Mexicans and/or Mexican Americans.	O	O	O	O	O
I have difficulty accepting certain practices and customs commonly found in some Mexicans and/or Mexican Americans.	O	O	O	O	O
I have, or think I would have, difficulty accepting Mexicans and/or Mexican Americans as close personal friends.	O	O	O	O	O
I have difficulty accepting ideas held by some African Americans.	O	O	O	O	O
I have difficulty accepting certain attitudes held by African Americans.	O	O	O	O	O
I have difficulty accepting some behaviors exhibited by African Americans.	O	O	O	O	O
I have difficulty accepting some values held by African Americans.	O	O	O	O	O
I have difficulty accepting certain practices and customs commonly found in some African Americans.	O	O	O	O	O
I have, or think I would have, difficulty accepting African Americans as close personal friends.	O	O	O	O	O

In your lifetime, how many times have you used: (FILL IN ONE BUBBLE)	Never Heard of It	Never Used It	1-2 times	3-10 times	11-19 times	20 or more times
Cigarettes	O	O	O	O	O	O
Beer	O	O	O	O	O	O
Wine Coolers/Wine	O	O	O	O	O	O
Liquor	O	O	O	O	O	O
Inhalants (such as glue, whiteout, paint, gas)	O	O	O	O	O	O
Marijuana	O	O	O	O	O	O
Cocaine/ Crack	O	O	O	O	O	O
Hallucinogens (such as LSD, PCP, mushrooms)	O	O	O	O	O	O
Xanax (bars, xanbars, zanbars, handlebars)	O	O	O	O	O	O
Ecstacy	O	O	O	O	O	O
Other Drugs (Which ones? _____)	O	O	O	O	O	O

In the past 30 days, how many times have you used: (FILL IN ONE BUBBLE)	Never Heard of It	Never Used It	1-2 times	3-10 times	11-19 times	20 or more times
Cigarettes	O	O	O	O	O	O
Beer	O	O	O	O	O	O
Wine Coolers/Wine	O	O	O	O	O	O
Liquor	O	O	O	O	O	O
Inhalants (such as glue, whiteout, paint, gas)	O	O	O	O	O	O
Marijuana	O	O	O	O	O	O
Cocaine/ Crack	O	O	O	O	O	O
Hallucinogens (such as LSD, PCP, mushrooms)	O	O	O	O	O	O
Xanax (bars, xanbars, zanbars, handlebars)	O	O	O	O	O	O
Ecstacy	O	O	O	O	O	O
Other Drugs (Which ones? _____)	O	O	O	O	O	O

Fill in the bubble that best describes how you feel about each of the statements:					
If someone offered . . .	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
I would accept a cigarette	O	O	O	O	O
I would accept beer or wine	O	O	O	O	O
I would accept liquor	O	O	O	O	O
I would accept inhalants (such as white out, glue, paint, gas)	O	O	O	O	O
I would accept marijuana	O	O	O	O	O
I would accept cocaine/ crack	O	O	O	O	O
I would accept hallucinogens (LSD, PCP, mushrooms, etc.)	O	O	O	O	O
I would accept xanax (bars, xanbars, zanbars, handlebars)	O	O	O	O	O
I would accept ecstacy	O	O	O	O	O
I would accept another drug (Which one?_____)	O	O	O	O	O

How dangerous do you think it is for kids your age to use: (FILL IN ONE BUBBLE)	Very Dangerous	Somewhat Dangerous	Not Very Dangerous	Not Dangerous At All	Don't Know
Cigarettes	O	O	O	O	O
Beer	O	O	O	O	O
Wine Coolers/Wine	O	O	O	O	O
Liquor	O	O	O	O	O
Inhalants	O	O	O	O	O
Marijuana	O	O	O	O	O
Cocaine/ crack	O	O	O	O	O
Hallucinogens (such as LSD, PCP, mushrooms)	O	O	O	O	O
Xanax (bars, xanbars, zanbars, handlebars)	O	O	O	O	O
Ecstacy	O	O	O	O	O
Other Drugs (Which ones? _____)	O	O	O	O	O

	Never	Once	Twice	Three Times	Four or More Times	I Never Got Offers
In the last 30 days, how often have you avoided people or places because alcohol, cigarettes, marijuana, or other drugs might be offered to you?	O	O	O	O	O	O

In the last 30 days, how often did you respond in the following ways when alcohol, cigarettes, marijuana or other drugs were offered to you? (Fill in an answer for each way of responding.)	Never	Once	Twice	Three Times	Four or More Times	I Never Got Offers
...say “No” without giving a reason why?	O	O	O	O	O	O
...give an explanation or excuse to turn down the offer?	O	O	O	O	O	O
...decide to leave the situation without accepting the offer?	O	O	O	O	O	O
...use some other way to not accept the alcohol or drugs?	O	O	O	O	O	O

If a friend offered you a beer at a party, would you:	Definitely	Probably	Probably not	Definitely not
...say “No” without giving a reason why?	O	O	O	O
...give an explanation or excuse to turn down the beer?	O	O	O	O
...just leave the situation without accepting the beer?	O	O	O	O
...find some other way to not accept the beer?	O	O	O	O
...avoid getting into that situation because you think beer might be offered there?	O	O	O	O

How angry would your parents be if they found out you:	Not at all angry	A little angry	Pretty angry	Very angry
...drank alcohol?	O	O	O	O
...smoked cigarettes?	O	O	O	O
...smoked marijuana?	O	O	O	O

How would your best friends react if you:	Very positively	Positively	No reaction	Negatively	Very negatively
...got drunk?	O	O	O	O	O
...smoked cigarettes?	O	O	O	O	O
...smoked marijuana?	O	O	O	O	O

Is it OK for someone your age to:	Definitely ok	Ok	Not ok	Definitely not ok
...drink alcohol?	O	O	O	O
...smoke cigarettes?	O	O	O	O
...smoke marijuana?	O	O	O	O

	All or most	Half	Some	Hardly any or none
About how many kids in your school would you guess have used alcohol, cigarettes, or marijuana at least once?	O	O	O	O
Now think about the friends you hang out with. How many do you think have used alcohol, cigarettes, or marijuana at least once?	O	O	O	O

Are you sure you would say NO if:	Very sure	Sure	Not sure	Not at all sure
...a family member offered you alcohol?	O	O	O	O
...a close friend offered you marijuana?	O	O	O	O
...a kid at school offered you a cigarette?	O	O	O	O

If you had the chance <u>this weekend,</u> would you use:	Definitely yes	Yes	No	Definitely no
...alcohol?	O	O	O	O
...cigarettes?	O	O	O	O
...marijuana?	O	O	O	O

Agree or Disagree?	Strongly agree	Agree	Disagree	Strongly disagree
Drinking alcohol makes parties more fun.	O	O	O	O
Smoking cigarettes makes people less nervous.	O	O	O	O
Smoking marijuana makes it easier to be part of a group.	O	O	O	O

INTEREST	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The video was boring	O	O	O	O	O
The video held my attention	O	O	O	O	O
I was interested in what was happening	O	O	O	O	O
The video was not acceptable to me	O	O	O	O	O
REALISM					
The characters in the video were very realistic	O	O	O	O	O
The characters in the video were not believable	O	O	O	O	O
The content of the video was very realistic	O	O	O	O	O
The content of the video was not believable	O	O	O	O	O
Some of the characters in the video were not believable	O	O	O	O	O
The story in the video was not believable	O	O	O	O	O
The language in the video was very realistic	O	O	O	O	O
The language in the video was not believable	O	O	O	O	O

	Very Much Like	Somewhat Like	Moderately Like	Very Little Like	Not at All Like
My close friends	O	O	O	O	O
My other friends	O	O	O	O	O
My girlfriend/boyfriend	O	O	O	O	O
Me	O	O	O	O	O

APPENDIX E

Focus Group Protocol

Drug Prevention Focus Group Protocol
End of Phase II

I. In general, what were your thoughts and feelings about the Keepin' It REAL curriculum?
II. What sticks out in your mind as the strongest points? The weakest? What needed changing?
III. Did the videos reflect real life and the culture you live in?
IV. Did the videos emphasize the drugs and situations you encounter? If not, what should have been done?
V. How, if at all, do you think being a part of the project has changed your perspective about drugs and alcohol?
VI. How, if at all, has this experience impacted your choices or behaviors?
VII. What were the four drug resistance strategies?
VIII. For whom would this curriculum be most helpful?
    a. Older or younger students?
    b. Kids who have not yet started using? Or kids who use "recreationally"?
IX. What would you change about the Keepin' It REAL curriculum if it is done in the future? What might make it more relevant for you and your peers? What would you like to see in future drug prevention projects?

APPENDIX F

School Success Profile Learning Organization: Items by Dimension

	Dimension	Item (At my school, we:)
Actions	Team Orientation	Work together as a team.
		Turn to one another for consultation and advice.
		Meet together to address challenges and solve problems.
	Innovation	Welcome and appreciate new ideas.
		Keep an open mind about new ways of doing things.
		Are willing to experiment with new practices.
	Involvement	Seek ideas and opinions from students.
		Work with parents as partners in the educational process.
		Engage and collaborate with community agencies and organizations.
	Information Flow	Share ideas and information with one another about how to make this school more effective.
		Feel comfortable sharing our learning experiences with one another.
		Maintain open lines of communication.
	Tolerance For Error	Agree that it is better to try new things and risk failure than not to try at all.
		View mistakes as opportunities for learning.
		Leanr from those experiences where our results fall short of defined goals.
	Results Orientation	Plan with the intended results in mind.
		Focus our efforts on achieving measurable results.
		Evaluate results against previously defined goals.

Sentiments	Common Purpose	Feel a strong sense of meaning and purpose to our work.
		Share a common belief in the importance of our work.
		Share a high level of investment in what we are her to do.
	Respect	Treat one another as competent professionals.
		Respect and appreciate individual differences.
		Value and acknowledge one another as individuals.
	Cohesion	Celebrate special occasions, accomplishments, and milestones.
		Enjoy working together.
		Feel a sense of connection and loyalty to one another.
	Trust	Trust one another.
		Demonstrate honesty and personal integrity in our work together.
		Can count on one another for help and support
	Mutual Support	Offer care and support for one another in times of personal and family need.
		Treat one another as both colleagues and friends.
		Show kindfulness and thoughtfulness to one another.
	Optimism	Approach our work with hopefulness and optimism.
		Believe we can make a positive difference in this school's ability to meet its performance goals.
		Feel confident that we can make a positive difference in students' lives.

APPENDIX G

Contact Information for Obtaining Keepin' it REAL Curriculum Materials:

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Contact Information for Obtaining the School Success Profile – Learning Organization:

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Vita

Laura Moon Hopson was born in Alabama in 1971. She attended Bowdoin College in Brunswick, Maine, and received a Bachelor of Arts degree in Psychology and German in May 1994. After working for three years as a customer support representative for Computer Services Corporation, she entered the Columbia University School of Social Work in New York City in January 1997 and received her Master of Science Degree in Social Work in May 1998. In the following two years, she worked as a clinical social worker for the Association to Benefit Children and the Educational Alliance in New York City and, in June 2000, began working as a Project Coordinator for the State University of New York. In September 2002, she entered doctoral degree program at the University of Texas at Austin School of Social Work in Austin, Texas. As a doctoral candidate, she taught a course in Generalist Social Work Practice and produced publications on the topics of HIV and STD prevention, drug use disorders, and Solution-focused Brief Therapy. She currently lives in Austin, Texas with her husband, Holland Hopson.

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